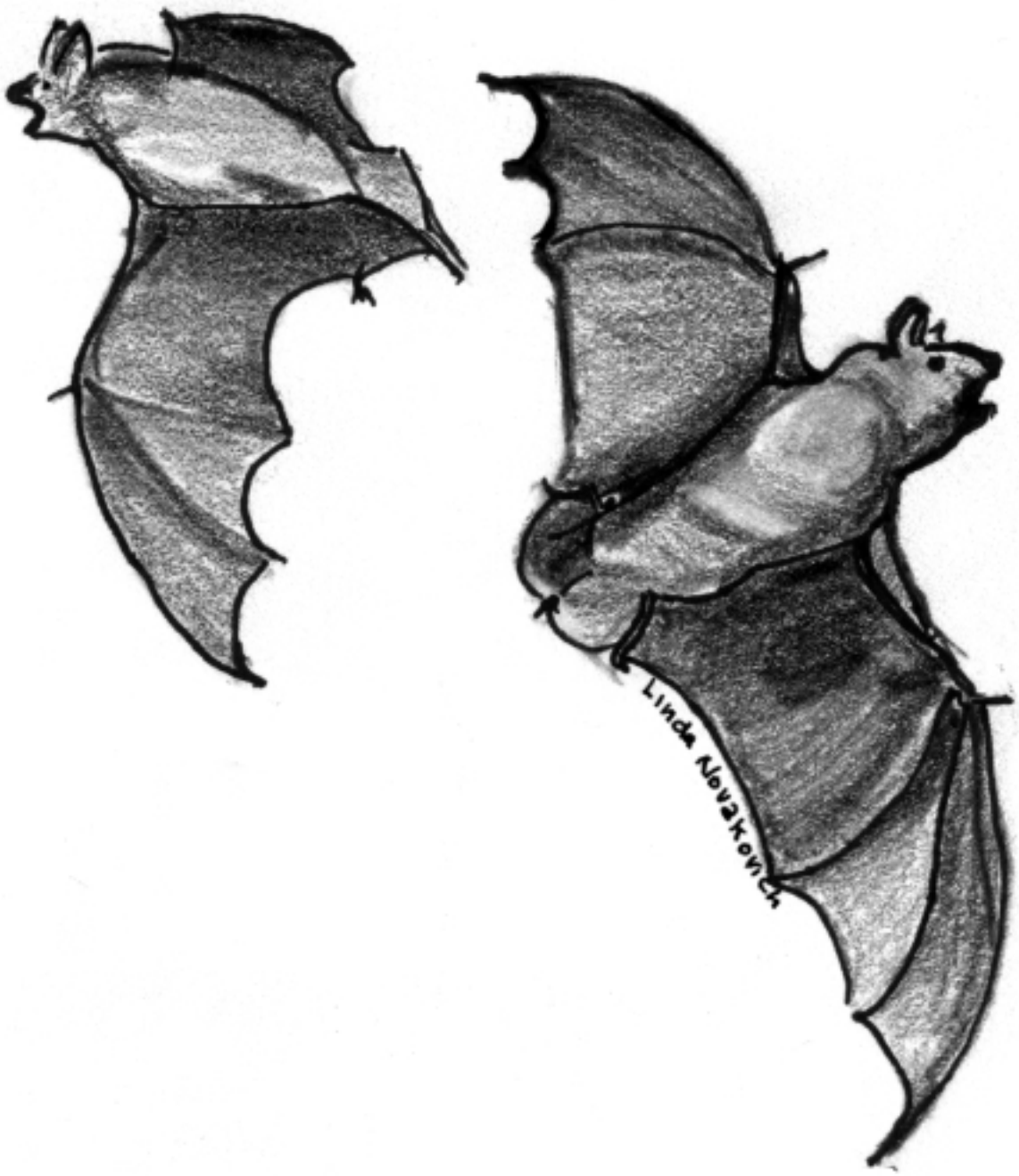
Appendix F

The Species Review Process



Appendix F

The Species Review Process

The goal of the Species Review Process was to evaluate the latest information about taxa in the Survey and Manage and Protect from Grazing Standards and Guidelines and some of the taxa in the Protection Buffer Standards and Guidelines of the Northwest Forest Plan and to use this information to propose changes to management for these taxa, as appropriate. This review process was done pursuant to the Survey and Manage Standards and Guidelines stating "...changes could include changing the schedule, moving species from one survey strategy to another, or dropping this mitigation requirement for any species whose status is determined to be more secure than originally projected." (USDA, USDI 1994b, p. C-6.) No provision for adding taxa to the Survey and Manage Standards and Guidelines was suggested or specified in the current direction. Therefore, no information for adding new taxa was sought or considered during this iteration of the process.

The Species Review Process built on the information and process conducted by the Forest Ecosystem Management Assessment Team (FEMAT) (USDA et al. 1993), the information presented in the Final Supplemental Environmental Impact Statement (Final SEIS) (USDA, USDI 1994a) for adoption of the Northwest Forest Plan, and the earlier Scientific Analysis Team (SAT) report (Thomas et al. 1993). This analysis process did not repeat the FEMAT and SEIS analysis processes. Rather, the process examined whether new information or understanding about the species was sufficient to warrant proposing changes in the status of taxa under the Survey and Manage Standards and Guidelines. The process also was extended to include most Protection Buffer and Protect from Grazing species, which are being considered in the SEIS for inclusion in the Survey and Manage Standards and Guidelines.

The Species Review Process was conducted twice during SEIS development, prior to release of the Draft SEIS and between the Draft SEIS and Final SEIS to include new information gathered by the Agencies, including through public comment. The basic steps of the process remained the same, although there were slight differences due to changes in the information available during the second process.

Species Review Process - 1999

The Species Review Process was initially conducted between December 1998 and February 1999 and consisted of three sequential analysis steps:

- *Step 1*: A filter to determine whether there was substantial new information or other reasons for additional review.
- *Step 2*: A review of current information on the taxa and the Northwest Forest Plan with reference to future persistence and habitat availability.
- *Step 3*: Use of the review and other available information to propose changes to the treatment of the taxon within a proposed alternative in this SEIS.

Each of the three steps is described below.

Step 1 - Systematic Filter to Determine Level of New Information

The purpose of this step was to separate the taxa for which there was substantial new information, questions as to their presence in the Northwest Forest Plan area, or specific concerns that warranted revisiting the FEMAT and SAT analysis results. Most Protection Buffer species were

also identified for additional consideration. Panels of one to three taxa specialists were convened for each taxa group to examine and consider the information available on each taxon (see list of panel participants at end of this appendix).

Panel members were provided with all available information relative to the taxa and taxa group from historic and new sources, including the SAT report (Thomas et al. 1993), FEMAT (USDA et al. 1993), the Northwest Forest Plan Final SEIS (USDA, USDI 1994a, including Appendix J2), the Northwest Forest Plan Record of Decision (USDA, USDI 1994b), and any other interagency documents such as Management Recommendations. From the Interagency Species Management System (ISMS) database, panels were provided with taxon-specific "dot maps" that showed all point locations, with indications of those found before and after January 1993. The panels also received a tally of the number of records by taxon in three categories (records located since 1993, records located from 1980 to 1993, and records located before 1980).

Because one purpose of this step was to determine whether there was substantial new information on individual taxa since the FEMAT panels completed their review in early 1993, panel members were instructed to assume that all sites located during or after 1993 represented new information. The pre-FEMAT information was further divided into sites located before and after 1980. Sites located before 1980 were considered less likely to be extant due to timber harvest and other habitat-disturbing activities on federal and other lands.

The panels members used this information, along with their knowledge of each taxon and the taxa group, to address the following four basic questions:

1. Was the taxon known or suspected to occur within the range of the northern spotted owl?

2. Was the taxon listed as a Protection Buffer species?

3. Were there any issues or errors that might affect the status of the taxon? Examples include, but are not limited to: (a) new taxonomic information that indicates a "species" listed on Table C-3 of the Northwest Forest Plan Record of Decision (USDA, USDI 1994b) was no longer considered a species; (b) species with a FEMAT rating of 100 percent probability to Outcome A; (c) taxon with documentation in Appendix J2 of the Northwest Forest Plan Final SEIS (USDA, USDI 1994a) that persistence may not be at risk; and, (d) suspected errors in inclusion or placement in components of Table C-3.

4. Was there new information on the taxon since signing of the Northwest Forest Plan Record of Decision that warrants a review of its status as a Survey and Manage or Protection Buffer species? New information included, but was not limited to, such information as: (a) significant change in number of known sites; (b) sufficient new populations to potentially alter the status of rarity and reduce concern for persistence; (c) new habitat information that indicates the taxon was more or less specialized than previously thought; (d) indications that a taxon may be rarer than anticipated; (e) new understanding of the effects of the Northwest Forest Plan as it has been implemented indicating that habitat protection for the taxon may differ from that anticipated during FEMAT and the Northwest Forest Plan Final SEIS; (f) increase in the known and suspected range of the taxon; and, (g) potential technical survey concerns.

Taxa not known or suspected to occur within the range of the Northwest Forest Plan (question 1), which had issues or errors that might affect their status (question 3), or with substantial new information since signing of the Northwest Forest Plan Record of Decision(question 4) were reviewed further in Step 2. All Protection Buffer species (question 2) were also reviewed further in Step 2. All information was recorded on Step 1 data sheets and stored in the individual taxon files (USDA, USDI Species Review Process 1999a). Based on this information, 187 taxa were evaluated in Step 2.

Step 2 - Review of Current Information by Taxon

The purpose of this step was to review and document all new information on the individual taxa that passed through the Step 1 process and to evaluate the effect of this information on our understanding of the taxon's distribution, habitat association, and level of concern for persistence for use in Step 3. This step was based on current information and knowledge of implementing the Northwest Forest Plan, including interagency implementation memoranda and the results of implementation monitoring.

Panels of 5 to 10 taxa specialists and other biologists were convened for each taxa group and asked to document the current state of our knowledge of each taxon's biology and habitat associations (see list of panel participants at end of this appendix). They reviewed the FEMAT, the Northwest Forest Plan Final SEIS (Appendix J2 in USDA, USDI 1994a), and the SAT conclusions (Thomas et al. 1993). They also evaluated whether and how the new information might affect the basis for the FEMAT, the Northwest Forest Plan Final SEIS, and the SAT conclusions (that is, how our understanding of the risk factors identified in the above documents has changed). The panels were presented specific questions related to the criteria that would be used for determining placement in categories during Step 3. Questions included items such as: Is it reasonable for trained field personnel to identify the taxon in the field? Were there sufficient differences in rarity or habitat conditions to potentially warrant different levels of concern for persistence or management in major portions of the range?

Panels were provided with the data sheets, information, and point maps used in the Step 1 process. Each panel was provided with the following information from the Interagency Species Management System Database:

- A point map with records by date categories.
- Number of records by date category and precision of location.
- Number of records by land allocation and ownership.
- Information from individual records if needed, including date and observer.

For a few taxa groups there was also limited information available on elevation, plant association, feature, and slope of sites or records.

For purposes of consistency, each panel was given a set of assumptions for various components of the Northwest Forest Plan that might affect late-successional and old-growth related taxa. These assumptions were drawn from the Northwest Forest Plan Record of Decision (USDA, USDI 1994a) and any interagency implementation memoranda for standards and guidelines that might affect the habitat of the Survey and Manage taxa. At the start of each panel session, the Species Review Coordinator met with all panel participants to review the process and Northwest Forest Plan assumptions, as well as answer any questions. Significant clarifications were added to the documentation of the process.

For each taxon, the individual taxa panels completed a worksheet containing specific questions to ensure that all potential issues were considered when evaluating the current condition of the taxa. Responses to the questions were based on a discussion of the panel, with written documentation of the information and rationale behind the response. The questions covered the following areas to provide the latest information on the individual taxa and allow evaluation of the effect of this information on our understanding of the taxon's distribution, habitat association, and level of concern for persistence:

1. Additional screening questions on range relative to the Northwest Forest Plan area, late-successional/old-growth association, and taxonomic changes such as the combining of previously separate taxa into a single, now common, taxon.
2. Biological information, including:
   — Rarity in terms of number of records, distribution of known sites, and range of the taxon.

— Habitat association, amplitude, rarity, and seral stage association.
— Effects of the Northwest Forest Plan on the taxon or habitat, including proportion of known sites and suspected habitat on federal lands, and proportion of known sites and suspected habitat in reserve land allocations.
— Effects of Matrix Standards and Guidelines and other management requirements of the Northwest Forest Plan area.
— Cumulative effects.
— Other questions on survey feasibility and differences in condition across range.

Panels were asked to review the concerns and documentation contained in the FEMAT report (and SAT for Protection Buffer species) and Appendix J2 of the Northwest Forest Plan Final SEIS (USDA, USDI 1994a). The panels compared the current information to that presented in the previous documents and provided summary documentation on how the new information might change the perception of concern for persistence for each taxon (that is, how understanding of the risk factors identified in the above documents has changed).

All information from the Step 2 panels was documented on data forms, including summaries of the discussion of the panel relative to each question. All Step 2 data sheets were stored in the taxon files (USDA, USDI Species Review Panel 1999b).

Step 3 - Determination of Appropriate Management for Each Taxon

The purpose of this step was to compare the information provided by the specialists in Steps 1 and 2, Northwest Forest Plan, and FEMAT processes to a set of criteria (see below) for the different proposed Survey and Manage categories. This comparison was used to propose changes to the category for each taxon under a proposed alternative for the Survey and Manage Standards and Guidelines which became Alternative 1 in this SEIS. This could include removing taxa from the list or moving Protection Buffer and Protect from Grazing species to the Survey and Manage Standards and Guidelines, and proposing the categories in which these taxa should be placed.

A panel of seven to eight regional biological staff and managers was convened to review the information (see list of panel participants at end of this appendix). The panel was provided with all the information from Step 1, including that from the FEMAT report, Northwest Forest Plan Final SEIS, and SAT Report. For the 187 taxa reviewed during Step 2 (those with substantial new information or other reasons for additional review), the panel was provided the worksheet and any additional information. Panel members were also provided a description of the six categories that were subsequently used to create Alternative 1 in this SEIS and criteria for placement of taxa into each category. Individual taxa specialists from the Step 2 panels were available at each session to assist with interpretation of the information, but they were not members of the Step 3 panel.

In April 1999, the panel reviewed the approximately 400 taxa included in the Survey and Manage, Protection Buffer, and Protect from Grazing Standards and Guidelines. Based on this effort, the panel either recommended removal of a taxon from the Survey and Manage Standards and Guidelines, or placement of the taxon into one of the six categories. These categories and their defining criteria were later incorporated into Alternative 1 in the SEIS. The panel reviewed the information on each taxon, compared this to the criteria for each category, and, by majority vote, proposed placing the taxon into the appropriate categories.

Criteria for Species Analysis

The following criteria and factors were used for evaluating the appropriate status and placement of the taxa within the appropriate Survey and Manage category. These criteria were refined during the initial steps of the process and all species were compared to the final draft of the criteria before completion of the process. The criteria were separated into basic criteria or category-related

criteria. The Survey and Manage basic criteria must be met to qualify for consideration under the Survey and Manage Standards and Guidelines.

Survey and Manage Basic Criteria

To be considered or covered by the Survey and Manage Standards and Guidelines, taxa must meet *all* of the following criteria. Taxa that did not meet all of these criteria were proposed for removal from the Survey and Manage list.

1. The taxon must occur within the Northwest Forest Plan area, or occur close to the Northwest Forest Plan area and have potentially suitable habitat within the Northwest Forest Plan area. *Taxa known from historic records within the boundary of the Northwest Forest Plan area were considered to occur within the boundaries, regardless of whether the historic sites were known to be extant or not.*

2. Taxa must meet the criteria for being closely associated with late-successional or old-growth forest, using the criteria of the Northwest Forest Plan Final SEIS (USDA, USDI 1994a), as described in Appendix E of this SEIS.

3. The reserve system and other standards and guidelines of the Northwest Forest Plan, other than the Survey and Manage Standards and Guidelines, do not appear to provide for reasonable assurance of the taxon's persistence. *This generally meant that habitat or habitat categories needed for the persistence of the taxon were not considered to be adequately provided for by the Northwest Forest Plan land allocations, standards and guidelines (other than Survey and Manage Standards and Guidelines), or the underlying National Forest Land and Resource Management Plans or BLM Resource Management Plans. Persistence, in this context, meant at a level of assurance intended in the 1994 Northwest Forest Plan.*

Category Criteria

For each taxon meeting the Survey and Manage basic criteria, the following criteria and information were used to place the taxon in the appropriate categories of Alternative 1 and, subsequently, Alternatives 2 and 3. (See Tables F-1 and F-2 for placement of species in Alternative 1 using the species review process described in this Appendix.) Past inventory efforts have varied widely between taxa groups and geographic locations, so the significance of population numbers and other information was viewed in that context. A low number of sites for taxa that has been well inventoried, for example, may be more indicative of rarity than the same number of sites for taxa for which there have been limited searches. Of the taxa groups covered under the Survey and Manage Standards and Guidelines, vertebrates and vascular plants have had the greatest level of interest and inventory prior to the Northwest Forest Plan, especially those taxa on the Agencies' special status species lists. However, mollusks and bryophytes received the least attention on federally managed lands prior to the Northwest Forest Plan, and therefore, higher numbers of sites of vertebrates and vascular plants may reflect, in part, greater survey effort.

In most cases, the criteria and factors for each category were not mutually exclusive, but rather served as indicators of the appropriate category for the taxon. If a taxon met criteria for more than one category equally well or to be intermediate between two categories, the more conservative (or protective) category was applied. Factors for determining whether a taxon was rare, or whether all sites were likely to be needed to provide a reasonable assurance of persistence, did not include numerical or absolute cutoffs, but rather were treated as comparative values. At the extremes, this does not pose any difficulty (e.g., two likely-extant federal sites were definitely rare). Intermediate values required consideration of the history of inventory for the taxon and other factors, and values for the number of likely-extant sites that indicate low numbers for some taxa may equally represent moderate to high numbers for other taxa.

Category A (Rare, Pre-Disturbance Surveys Practical)

Objective: Manage all known sites and minimize inadvertent loss of undiscovered sites.

Criteria for including a species in Category A involved factors related to reaching the following four primary conclusions:

1. There was a high concern for persistence.
2. The species occurred rarely and was poorly distributed within its range in the Northwest Forest Plan area.
3. All known sites or population areas were likely to be necessary to provide reasonable assurance of the taxon's persistence.
4. Pre-disturbance surveys were practical.

Information used to determine if there was a high concern for persistence and all sites were likely necessary to provide reasonable assurance of the taxon's persistence included factors such as:

- The low number of likely-extant sites/records on federal lands indicates rarity. *This requires adjusting the number of database records. Records may be lower than expected because of chronic under-reporting of common taxon or greater than the actual number of sites due to multiple database records of individual sites. Sites recorded over two decades ago may no longer be extant, especially in highly developed or quickly developing areas such as the Puget Sound.*
- Taxon is poorly distributed within the taxon's range or habitat. *Uneven pattern of distribution relative to potential habitat indicates that other factors may be limiting the distribution and occurrence of the taxon.*
- There is a limited number of individuals per site, indicating that individual sites were considered to be less secure.
- The taxon has highly specialized habitat requirements (narrow ecological amplitude), limiting the habitat available to the taxon and reducing the likelihood that many new sites will be located.
- Microsite habitat is limited, reducing the likelihood that many new sites will be located.
- Dispersal capability is limited relative to federal habitat, resulting in potential for individual sites/populations to be isolated.
- Reproduction and/or life history characteristics provide additional risk factors to maintaining existing and future populations. *This may include late age of maturity, low reproductive rates, or low survival rates that indicate a taxon may have trouble persisting at present sites or surviving bottlenecks.*
- Low number of sites in reserves and/or low likelihood of sites or habitat in reserves.
- Habitat fragmentation that may lead to genetic isolation.
- Factors beyond management of the Northwest Forest Plan affect persistence, but special management under the Northwest Forest Plan will help persistence.
- Declining habitat trend.

Surveys prior to initiation of habitat disturbance were considered "practical" if all of the following factors applied:

- The taxon appears annually or predictably and produces identifying structures or the critical identification characteristics are visible for an extended time.
- The taxon is not so minuscule or cryptic as to be barely visible.
- The taxon can authoritatively be identified by more than a few experts, or the number of available experts is not so limited that it would be impossible to accomplish all surveys or identifications for all proposed habitat-disturbing activities in the Northwest Forest Plan area needing identification within the normal planning period for the activity.

- The taxon can be readily distinguished in the field and needs no more than simple laboratory or office examination to confirm its identification.
- Surveys do not require unacceptable safety risks.
- Surveys can be completed in two field seasons (approximately 7-18 months). *Therefore, surveys can be completed during a normal project development and planning process*.
- Credible survey methods for the taxon are known or can be developed within a reasonable time period (approximately 1 year).

Category B (Rare, Pre-Disturbance Surveys Not Practical)

Objective: Manage all known sites and minimize inadvertent loss of undiscovered sites.

Criteria for including a taxon in Category B involved factors related to reaching the following four primary conclusions:

1. There was a high concern for persistence.
2. The taxon occurred rarely and was poorly distributed within its range in the Northwest Forest Plan area.
3. All known sites or population areas were likely to be necessary to provide reasonable assurance of the taxon's persistence.
4. Pre-disturbance surveys were not practical.

Surveys prior to initiation of habitat disturbance were not considered "practical" if any of the following factors applied:

- The taxon does not, annually or predictably, produce identifying structures or the critical identification characteristics are visible during only a very short or unpredictable time period. *Therefore, targeting surveys to correspond with the appropriate timing when the taxon can be identified is highly impractical*.
- The taxon is so minuscule or cryptic as to be barely visible.
- The taxon can only be authoritatively identified by a few experts or the number of available experts is so limited that it is impossible to accomplish all surveys or identifications for all proposed habitat-disturbing activities in the Northwest Forest Plan area needing identification within the normal planning period for the activity.
- The taxon cannot be readily distinguished in the field or needs more than simple laboratory or office examination to confirm its identification.
- Surveys require unacceptable safety risks.
- Surveys cannot be completed in two field seasons (approximately 7-18 months). *Therefore, surveys cannot be completed during a normal project development and planning process*.
- Credible survey methods for the taxon are not known or cannot be developed within a reasonable time period (approximately 1 year).

Category C (Uncommon, Pre-Disturbance Surveys Practical)

Objective: Identify and manage high-priority sites to provide for reasonable assurance of the taxon's persistence. Until high-priority sites can be determined, manage all known sites.

Criteria for including a taxon in Category C involved factors related to reaching the following four primary conclusions:

1. There was not a high concern for persistence.
2. It was likely that not all known sites or population throughout the taxon's range in the Northwest Forest Plan area were necessary for reasonable assurance of persistence of the taxon.

3. The taxon was uncommon (as opposed to rare).
4. Pre-disturbance surveys were practical.

Information used to determine if there was a moderate concern for persistence and not all sites were likely necessary to provide reasonable assurance of the taxon's persistence included factors such as:

- A higher number of likely-extant sites/records does not indicate rarity of the taxon. *This requires adjusting the number of database records. Records may be lower than expected because of chronic under-reporting of common taxon or greater than the actual number of sites due to multiple database records of individual sites. Sites recorded over two decades ago may no longer be extant, especially in highly developed or quickly developing areas such as the Puget Sound.*
- The number of individuals per site does not indicate that many known sites are not secure. *There may be a low to high number of individuals per site, but populations are not consistently low.*
- There is a less restricted distribution pattern relative to range or potential habitat.
- There is a moderate-to-broad ecological amplitude, such that the habitat available to the taxon is more widespread and the likelihood of finding new sites is not reduced.
- There is a moderate-to-high likelihood of sites in reserves.
- Dispersal capability is not substantially limited relative to federal habitat, reducing the potential for individual sites/populations to be isolated.
- Reproduction and/or life history characteristics do not provide additional risk factors to maintaining existing and future populations. *The taxon does not exhibit characteristics, such as late age of maturity, low reproductive rates, or low survival rates that indicate a taxon may have trouble persisting at present sites or surviving bottlenecks.*

Surveys prior to initiation of habitat disturbance were considered "practical" if all of the factors described in Category A applied.

Category D (Uncommon, Pre-Disturbance Surveys Not Practical or Not Necessary)

Objective: Identify and manage high-priority sites to provide for a reasonable assurance of the taxon's persistence. Until high-priority sites can be determined, manage all known sites.

Criteria for including a taxon in Category D involved factors related to reaching the following four primary conclusions.

1. There was not a high concern for persistence.
2. It was likely that not all known sites or population throughout the taxon's range in the Northwest Forest Plan area were necessary for reasonable assurance of persistence of the taxon.
3. The taxon was uncommon (as opposed to rare).
4. Surveys were not practical or not necessary. *That is, surveys of suitable habitat across the landscape were likely to be more effective at finding sites needed for long-term persistence than focusing in areas proposed for projects.*

Information used to determine if there was a moderate concern for persistence and not all sites were likely necessary to provide reasonable assurance of the taxon's persistence include the same factors as Category C.

Surveys prior to initiation of habitat disturbance were not considered "practical" if any of the factors described in Category B applied.

Category E (Rare, Status Undetermined)

Objective: Manage all known sites while determining if the taxon meets the basic criteria for Survey and Manage and, if so, to which category it should be assigned.

Criteria for including a taxon in Category E involved factors related to reaching the following two primary conclusions.

1. The number of known sites indicated the taxon was rare.
2. Information was insufficient to determine whether Survey and Manage basic criteria were met, or to determine what management was needed for a reasonable assurance of the taxon's persistence.

Information used to determine that the taxon was rare primarily included the number of likely-extant sites/records and survey information on federally managed lands. *This requires adjusting the number of database records. Records may be lower than expected because of chronic under-reporting of common taxon or greater than the actual number of sites due to multiple database records of individual sites. Sites recorded over two decades ago may no longer be extant, especially in highly developed or quickly developing areas such as the Puget Sound.*

Factors used to reach a conclusion that information was insufficient to determine whether Survey and Manage basic criteria were met or to determine what management was needed for a reasonable assurance of the taxon's persistence included:

- Significant questions remain as to whether the taxon meets the basic criteria for Survey and Manage (i.e., the taxon may not likely occur within the Northwest Forest Plan area, or may not be closely associated with late-successional or old-growth forest using the criteria in Northwest Forest Plan Final SEIS (USDA, USDI 1994a) as described in Appendix E of this SEIS.
- Information is insufficient to determine assignment of the taxon in a category.

Category F (Uncommon or Concern for Persistence Unknown, Status Undetermined)

Objective: Determine if the taxon meets the basic criteria for Survey and Manage, and if so, to which category it should be assigned.

Criteria for including a taxon in Category F involved factors related to reaching the following two primary conclusions.

1. The total number of sites indicated that the taxon was uncommon, rather than rare.
2. Information was insufficient to determine whether Survey and Manage basic criteria were met, or to determine what management was needed for a reasonable assurance of the taxon's persistence.

Information used to determine if the species was uncommon (but not rare) included primarily a moderate-to-higher number of likely-extant sites/records. *This requires adjusting the number of database records. Records may be lower than expected because of chronic under-reporting of common taxon or greater than the actual number of sites due to multiple database records of individual sites. Sites recorded over two decades ago may no longer be extant, especially in highly developed or quickly developing areas such as the Puget Sound.*

Factors used to reach a conclusion that information was insufficient to determine whether Survey and Manage basic criteria were met or to determine what management was needed for a reasonable assurance of the taxon's persistence included:

- Significant questions remain as to whether the taxon meets the basic criteria for inclusion in Survey and Manage (i.e., the taxon may not likely occur within the Northwest Forest Plan area, or may not be closely associated with late-successional or old-growth forest using the criteria from the Northwest Forest Plan Final SEIS (USDA, USDI 1994a) as described in Appendix E of this SEIS.
- Information is insufficient to determine assignment of the taxon in a category.

Species Review Process - 2000

Based on new information collected by the Agencies since January 1999, including information from public comments to the Draft SEIS, the Species Review Process was again conducted in February and March 2000. The overall goal of this process was to review the placement of species in the Survey and Manage Draft SEIS. Only species that met one of the following criteria were reviewed; the remainder were considered to be correctly placed in the 1999 Species Review Process.

1. There was significant new information that might change the concerns for, or placement of, a species.
2. The 1999 Step 3 panel was significantly divided on the placement of the species.
3. The species was identified as a potential outlier in a consistency review of the placement of the species in the Draft SEIS.

The process utilized in the Draft SEIS, with minor differences due to changes in the information available to the panels, was also utilized in 2000. The process consisted of three sequential analysis steps:

- *Step 1*: A filter to determine whether there was substantial new information or other reasons for additional review.
- *Step 2*: A review of current information on the taxa and the Northwest Forest Plan with reference to future persistence and habitat availability.
- *Step 3*: Use of the review and other available information to propose changes to the treatment of the taxon within a proposed alternative in this SEIS.

Step 1 - Systematic Filter to Determine Level of New Information

The purpose of this step was to separate the taxa for which there was substantial new information since the previous Species Review Process (described above) that would warrant revisiting the results of that process. Panels of one to several taxa specialists were asked to examine the latest information available on the species (see list of panel participants at end of this appendix).

Panel members were provided with a list of species with new locations in the ISMS database. New locations were defined as data entered since October 10, 1998 (the last date of data entry for the previous Species Review Process). Two taxon-specific “dot maps” were provided that showed all point locations known at the time of the previous process (entered into the ISMS database before October 10, 1998) and all locations entered since the previous process, with indications of those found before and after January 1993. The panels received two tally sheets of the number of records by taxon in three categories (records located since 1993, records located from 1980 to 1993, and records located before 1980). These were also split by locations known at the time of the previous process (entered into the ISMS database before October 10, 1998) and locations entered since the previous process. For this iteration of the process, many of the duplicate records were removed from the database, so the number of records used in this Species Review Process more closely represents actual unique locations on the ground. Panels were also provided with a complete set of the information available during the 1999 Species Review Process, including any panel notes.

The panels were asked to review all species with new ISMS records entered since October 10, 1998, as well as any species for which they were aware of new information that might affect the rarity, survey practicality, presence in the Northwest Forest Plan area, or late-successional/old-growth forest association. Panel members used this information, along with their knowledge of each taxon and the taxa group, to address the following questions:

1. Had there been any change in knowledge since the last Species Review Process (1999), as to whether this species occurs or is likely to occur in the Northwest Forest Plan area?

2. Had there been any change in knowledge since the last Species Review Process (1999), as to whether this species is closely associated with late-successional or old-growth forests (using Draft SEIS definition)?

3. Had there been any change in knowledge since the last Species Review Process (1999), as to the practicality of pre-disturbance surveys?

4. Was there new information, or changes in knowledge or understanding, since the last Species Review Process (1999), that warrants additional review of this species' base information in Step 2? This included, but was not limited to: (a) substantial increase or decrease in the number of likely-extant Federal records/sites; (b) substantial change in understanding of habitat association of species; (c) substantial increase or decrease in the suspected range of the species; (d) substantial change in understanding of distribution of the species within its range; (e) substantial change in understanding of the rarity of the species; (f) substantial new understanding of how the Northwest Forest Plan affects the species; and, (g) substantial new taxonomic information indicating that the "species" on Table 2-2 of the Draft SEIS is no longer considered a separate taxonomic entity, or that previously separate taxonomic entities have been combined, such that the range, distribution, or populations have substantially changed.

Any positive responses were compared to the reasons for placement of the species on Table F-1 of the Draft SEIS. If the new information potentially affected the reasons for its placement, or would indicate another placement was more appropriate, the species was forwarded to Step 2.

Step 2 - Review of Current Information by Taxon

The purpose of this step was to review and document substantial new information on the individual taxa and evaluate the effect of this information on our understanding of the taxon's distribution, habitat association, and level of concern for persistence under the Northwest Forest Plan for use in Step 3.

As in the 1999 Species Review Process, panels of taxa specialists and other biologists were convened for each taxa group and asked to document the current state of our knowledge of each taxon's biology and habitat associations (see list of panel participants at end of this appendix). They reviewed all of the information available on the species, including responses on any Step 2 worksheets from the 1999 Species Review Process, in light of the most recent information on the species. Only species with substantial new information (as determined from the Step 1 process) were reviewed. The panels were asked to review and update the information, conclusions, and discussion for all portions of the 1999 Step 2 panel notes affected by new information. For those species that do not have Step 2 panel notes (those previously determined to have no significant new information since FEMAT), the Step 2 panel completed notes as described in the 1999 Species Review Process.

Step 3 - Determination of Appropriate Management for Each Taxon

The purpose of this step was to compare the information provided by the specialists in Steps 1 and 2, the 1999 Species Review Process, Northwest Forest Plan, and FEMAT processes to a set of

criteria for the different proposed Survey and Manage categories. The comparison was used to propose changes to the category for each taxon under a proposed alternative for the Survey and Manage Standards and Guidelines. The criteria for this process were those listed for each category in Chapter 2 of this SEIS, and are generally the same as the ones used in the previous Species Review Process as described above.

A panel of six regional biological staff and managers was convened to review the information (see list of panel participants at end of this appendix). The panel was provided with all the information from the 1999 Species Review Process. For the taxa reviewed by the 2000 Step 2 panels (those with substantial new information or other reasons for additional review), the panel was provided the revised or new Step 2 panel notes. Individual taxa specialists from the Step 2 panels were available at each session to assist with interpretation of the information, but they were not members of the Step 3 panel.

In March 2000, the Step 3 panel reviewed all taxa that met one of the three criteria described at the beginning of the Species Review Process - 2000 section. These include significant new information that might change the concerns for or placement of a species, significant division on placement of the species in the 1999 Species Review Process, or questions concerning consistency of the placement of the species in the Draft SEIS. The panel reviewed the information on each taxon, compared this to the criteria for each category, and, by majority vote, proposed placing the taxon into the appropriate categories.

The primary reasons for placing each taxon in the category were recorded in a summary table format (Tables F-1 and F-2 in this Appendix).

Definition of a species "site": The criteria for placement of species include evaluation of the general number of likely-extant sites on federal lands. To provide a consistent evaluation of sites within and across taxa groups, a definition of "site" was developed for this process, and a method to evaluate whether a site was "likely extant" was developed. Sites were generally defined as non-duplicative records from the ISMS database with the following corrections.

For a variety of reasons relative to site management and the species biology, the definition of a "site" or record for entry into the ISMS database varied by taxa group. The most striking example was for terrestrial mollusks. For these species, a site was defined as all locations within 30 feet of each other, so individual records in the ISMS database could be as close together as 31 feet. For other species, the distance between locations to define sites was 100 meters. For locally-abundant mollusks, this could result in a two to ten-fold increase in the number of sites recorded in ISMS when compared to other taxa with similar distribution and abundance. Therefore, for locally-abundant mollusks, the number of records in ISMS was divided by the appropriate factor, as provided by the Step 2 panel or taxa experts, prior to the determination of the number of likely-extant sites on federal lands. The number of sites depicted on Table 3&4-4 in the Draft SEIS do not reflect this method of site determination and, therefore, are often higher than the numbers used in this Species Review Process. Additionally, Table 3&4-4 was not reproduced in the Final SEIS. Table F-2 in this appendix includes site information based on this method for site determination.

The following method was used to evaluate the number of likely-extant sites in a consistent manner that could be compared within or across taxa groups. For some species, many of the known sites are historic, having been initially located 10 to 100 years ago, and many have not been visited recently to determine if the species is still present on the site. The most recent visit to a site was used as the best indicator of recent presence. Most sites on which a species was located on or after January 1993 were assumed to be still extant. Little habitat disturbance occurred between January 1993 and the implementation of the Northwest Forest Plan. Most species required known site management under the Northwest Forest Plan, so most of these sites would have received protection under the Northwest Forest Plan. Therefore, the number of federal sites located since January 1993 was considered to approximate the number of likely-extant sites on federal lands.

The number of federal sites located or confirmed during or after January 1993, adjusted for differences in the site definition, were used to determine the general level of likely-extant sites (e.g. low, moderate, high) on federal lands. The actual thresholds for these general levels varied between, and sometimes within, taxa groups, based on the history of survey effort and difficulty of locating and identifying species. A higher number of sites is expected for even rare species that have been surveyed prior to projects for the past several years than for species that have had limited survey efforts or which are difficult for even experts to locate and identify.

Tables F-1 and F-2 reflect the corrections for site definition, definition of likely extant, and taxa-specific thresholds.

Changes in species assignments to categories between Draft and Final SEIS: Approximately 80 species were assigned to different categories, removed from, or returned to, Survey and Manage in all or part of their range, when compared to the assignments made by the 1999 Species Review Process and shown in the Draft SEIS. These changes are based on consideration of new information or reconsideration of existing information, as described above. These changes are reflected on Table 2-2 in this SEIS, and are specifically summarized on Table 2-11, *Changes to Survey and Manage Species Category Between Draft and Final SEIS for Alternative 1 Based on Additional Information and Species Review*.

The changes between Draft SEIS and Final SEIS include 12 species in all or part of their range that were proposed for removal from Survey and Manage in the Draft SEIS and now are proposed to remain in the Survey and Manage Standards and Guidelines. This change initially raised concern in the Agencies that the application of the criteria for removal may have, at least in the Draft SEIS, permitted removal decisions that were not warranted. Careful examination of the change to these 12 species was made to determine if any flaws to the process or criteria might lead to problems in the future. This examination indicated that species came back on for four main reasons.

1. One fungi species, *Ramaria couterae*, had previously been reported only from Sierra County in California, eastern Oregon, and other areas well outside the Northwest Forest Plan area. Between Draft SEIS and Final SEIS, it was found within the Northwest Forest Plan area and is now placed in Category 1B.

2. Two rare lichen species, *Chaenotheca chrysocephala* and *Chaenotheca ferruginea*, had been determined not to be closely associated with late-successional forests. New information, from asking Step 1 and 2 panel members to specifically address late-successional association and from clarifying the criteria for late-successional association to defer to the FEMAT determination in cases of uncertainty (see Appendix E), indicates these species may be associated with remnant late-successional components found in younger stands. They have now been assigned to Category 1B.

3. Two lichen species, *Lobaria oregana* and *Usnea longissima*, had been removed because they were widespread, relatively common, and it was determined that the reserve land allocations and other standards and guidelines of the Northwest Forest Plan provided a reasonable assurance of persistence. Reconsideration of portions of their range, in part because *Usnea longissima* (California and three Oregon counties) was found to be on the State of California Red List of rare and endangered species for three counties in northwestern California, led to a decision to return both species to Survey and Manage for the southern part (generally California) of their range. For this part of their range, they have been assigned to Category 1A.

4. Eight uncommon lichen species, *Bryoria tortuosa* (eastside), *Calicium viride*, *Calicium glaucellum*, *Chaenotheca furfuracea*, *Hypogymnia oceanica*, *Nephroma bellum, Pannaria saubinetii,* and *Usnea longissima* (Washington and most of Oregon), were reconsidered by the Step 3 panel because the 1999 panel had been divided regarding their placement, or they were identified as potential outliers in a consistency

review of placements of similar species. Because of uncertainty and the likely somewhat higher standard for returning species in the future (the provisions for adding species), the panel chose the more conservative approach of leaving them on Survey and Manage at this time. Seven species are placed in Category 1F in recognition that the number of known sites precludes the need for pre-disturbance surveys or known site management. One species, *Bryoria tortuosa*, is placed in Category 1D (but identified as pre-disturbance surveys not necessary) in recognition that the number of known sites precludes the need for pre-disturbance surveys. The current information is not sufficient to completely remove any reasonable concern for persistence. This placement permits continued examination with strategic surveys in order to more confidently determine if the reserve land allocations and other standards and guidelines of the Northwest Forest Plan provide a reasonable assurance of persistence for these species.

Given the reasons cited here, the small percentage they represent of the more than 400 species evaluated, the nature of the information that led to these decisions, and the clarification of the criteria for late-successional association made between the Draft and Final SEIS, these changes do not indicate any significant problems with the criteria for removing species from Survey and Manage. Future application of the criteria for removal from Survey and Manage is expected to continue to provide the assurance of persistence intended by these standards and guidelines. Further, the action alternatives contain provisions for adding species in the future if new information warrants such consideration.

List of Panel Participants

Step 1 Panels

Amphibian Panel		
Charlie Crisafulli (1999)	Forest Service, PNW	Biologist
Deanna Olson, Ph.D. (1999, 2000)	Forest Service, PNW	Biologist
Bryophyte Panel		
John Davis (1999, 2000)	U.S. Fish and Wildlife Service	Biologist
Rick Dewey, Ph.D. (1999, 2000)	Forest Service, Region 6	Botanist
Judy Harpel, Ph.D. (1999, 2000)	Forest Service, PNW	Bryologist
Robin Lesher (1999, 2000)	Forest Service, Region 6	Ecologist
Fungi Panel		
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Thomas O'Dell, Ph.D. (1999, 2000)	Forest Service, PNW	Mycologist
Jane E. Smith (1999)	Forest Service, PNW	Mycologist
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Robin Lesher (1999, 2000)	Forest Service, Region 6	Ecologist
Mollusk Panel		
Tom Burke (1999)	Forest Service, Region 6	Biologist
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Karen Raftery (1999)	Forest Service, Region 5	Biologist
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Canada Lynx Panel		
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Great Gray Owl		
Robin Bown (2000)	U.S. Fish and Wildlife Service	Biologist
Sarah Madsen (2000)	Forest Service, Region 6	Biologist

Step 2 Panels

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Charlie Crisafulli (1999, 2000)	Forest Service, PNW	Biologist
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Larry Jones (2000)	Forest Service, PNW	Biologist
Richard Nauman (1999, 2000)	Forest Service, PNW	Biologist
Kathy Nickell (1999, 2000)	Forest Service, Region 5	Biologist
Lisa Ollivier (1999, 2000)	Forest Service, PSW	Biologist
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Mollusk Panel

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Vascular Plant Panel

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Laura Potash (1999)	Forest Service, Region 6	Botanist
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Red Tree Vole Panel

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Brian Biswell (1999, 2000)	Forest Service, PNW	Biologist
Mike Blow (1999, 2000)	Bureau of Land Management	Biologist
Sarah Madsen (1999)	Forest Service, Region 6	Biologist

Great Gray Owl Panel

Cheryl Freisen (1999)	Forest Service, Region 6	Biologist
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Barbara Behan (1999)	U.S. Fish and Wildlife Service	Biologist
Shane Kamrath (1999)	Forest Service, Region 6	Biologist
Matt Broyles (1999)	Bureau of Land Management	Biologist

Step 3 Panel

Robin Bown (1999, 2000) (Species Review Coordinator)	U.S. Fish and Wildlife Service	Biologist
Paula Crumpton (1999, 2000)	Forest Service, Region 5	Biologist
John Larsen (1999, 2000)	Forest Service, Region 5	Manager
Robin Lesher (1999, 2000)	Forest Service, Region 6	Ecologist
Cheryl McCaffrey (1999, 2000)	Bureau of Land Management	Botanist
Loyal Mehrhoff (1999)	U.S. Fish and Wildlife Service	Biologist
Neal Middlebrook (1999)	Bureau of Land Management	Manager
Randy Molina, Ph.D. (1999, 2000)	Forest Service, PNW	Mycologist

The following Agency taxonomic group leads or specialists assisted in clarifying some taxon-specific information:

Brian Biswell (1999, 2000)	Forest Service, PNW	Biologist
Mike Castellano, Ph.D. (1999)	Forest Service, PNW	Mycologist
Nancy Duncan (1999, 2000)	Bureau of Land Management	Biologist
Judy Harpel, Ph.D. (1999, 2000)	Forest Service, PNW	Bryologist
Russ Holmes (1999)	Bureau of Land Management	Botanist
Thomas O'Dell, Ph.D. (1999, 2000)	Forest Service, PNW	Mycologist

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Total Sites Since '93[3]**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
FUNGI					
Acanthophysium farlowii (Aleurodiscus farlowii)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area, but under-collected. Pre-disturbance survey not practical; multi-year surveys required.
Albatrellus avellaneus	1, 3	B	3	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Albatrellus caeruleoporus	1, 3	B	5	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Albatrellus ellisii	3	B	7	6-8	Very low number of total sites in Northwest Forest Plan area. Need information on habitat and rarity. Pre-disturbance survey not practical; multi-year surveys required.
Albatrellus flettii	3	B	24	20	Low number of total sites in Northwest Forest Plan area; 80 percent federal. Pre-disturbance survey not practical; multi-year surveys required.
Alpova alexsmithii	1, 3	B	5	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Alpova olivaceotinctus	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area, although under-collected. Pre-disturbance survey not practical; multi-year surveys required.
Arcangeliella camphorata (*Arcangeliella* sp. nov. #Trappe 12382; *Arcangeliella* sp. nov. #Trappe 12359)	1, 3	B	9	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Arcangeliella crassa	1, 3	B	3	0	Very low number of total sites in Northwest Forest Plan area, although under-collected. Pre-disturbance survey not practical; multi-year surveys required.
Arcangeliella lactarioides	1, 3	B	2	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Asterophora lycoperdoides	3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.
Asterophora parasitica	3	B	5	0	Very low number of total sites, no recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.
Baeospora myriadophylla	3	B	16	1	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Balsamia nigrens (Balsamia nigra)	1, 3	B	4	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Boletus haematinus	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Boletus pulcherrimus	1, 3	B	8	0	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Bondarzewia mesenterica (Bondarzewia montana)	1, 2, 3	B	9	20-35	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Bridgeoporus nobilissimus (Oxyporus nobilissimus)	1, 2, 3	A	3	10	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey practical; large and perennial.
Bryoglossum gracile	1, 3	Off	4	0	Not closely associated with late-successional or old-growth forest; associated with subalpine meadows and boulder fields. Large areas of potential habitat protected.
Cantharellus cibarius	3, 4	Off	--	--	This species does not occur in the Northwest Forest Plan area.
Cantharellus formosus	1, 3	Off	24	60+	Not closely associated with late-successional or old-growth forest; most abundant in younger forest. Common.
Cantharellus subalbidus	3, 4	D	18	47-110	Moderate/high number of total sites in Northwest Forest Plan area; likely under-reported so it may be more common than number of total sites indicates. Habitat broad. Pre-disturbance survey not practical; multi-year surveys required.
Catathelasma ventricosa	3	B	12	2	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Chalciporus piperatus (*Boletus piperatus*)	3	D	57	96	Moderate/high number of total sites in Northwest Forest Plan area. Widespread. Pre-disturbance survey not practical; multi-year surveys required.
Chamonixia caespitosa (*Chamonixia pacifica* sp. nov. #Trappe #12768)	1, 3	B	5	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Choiromyces alveolatus	1, 3	B	7	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Choiromyces venosus	1, 3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Total Sites Since '93[3]**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
Chromosera cyanophylla (Mycena lilacifolia)	3	B	30	25	Low number of total sites in Northwest Forest Plan area, most historic. Pre-disturbance survey not practical; multi-year surveys required.
Chroogomphus loculatus	1, 3	B	1	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Chrysomphalina grossula	3	B	13	0	Low number of total sites in Northwest Forest plan area, none recent. Pre-disturbance survey not practical; multi-year surveys required.
Clavariadelphus borealis	3, 4	Off	--	--	Synonymous with *Clavariadelphus truncatus* which is also a Survey and Manage species. See *Clavariadelphus truncatus*.
Clavariadelphus ligula	3, 4	B	14	18	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Clavariadelphus lovejoyae	3, 4	Off	--	--	Not in Northwest Forest Plan area; this species is known only from Wyoming.
Clavariadelphus occidentalis (*Clavariadelphus pistillaris*)[4]	3, 4	B	19	35	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Clavariadelphus sachalinensis	3, 4	B	4	3	Very low number of total sites in Northwest Forest Plan area; historic sites only. Pre-disturbance survey not practical; multi-year surveys required.
Clavariadelphus subfastigiatus	3, 4	B	0	1	One historic site in Northwest Forest Plan area; probably extirpated. Pre-disturbance survey not practical; multi-year surveys required.
Clavariadelphus truncatus (syn. *Clavariadelphus borealis*)	3, 4	B	22	17	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Clavicorona piperata (Clavicorona avellanea)	3	Off	--	--	*Clavicorona piperata* passed the original FEMAT screens (the Northwest Forest Plan provides a reasonable assurance of species persistence).
Clavulina castanopes v. *lignicola (Clavulina ornatipes)*	3, 4	B	9	1	Synonymous with *Clavulina castanopes v. lignicola*. Low number of total sites in Northwest Forest Plan area; most historic. Pre-disturbance survey not practical; multi-year surveys required.
Clavulina cinera	3, 4	Off	--	--	Synonymous with *Clavulina cristata* which is also a Survey and Mange species. See *Clavulina critstata*.
Clavulina cristata (syn. *C. cinera*)	3, 4	Off	Many	65	Not closely associated with late-successional or old-growth forest.
Clitocybe senilis	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Clitocybe subditopoda	1, 3	B	4	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Collybia bakerensis	1, 3	B	14	14	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Collybia racemosa	3	B	30	2	Low number of total sites in Northwest Forest Plan area; most historic; half federal. Pre-disturbance survey not practical; multi-year surveys required.
Cordyceps capitata	3	B	25	15	Low number of total sites in Northwest Forest Plan area; most historic; most federal. Pre-disturbance survey not practical; multi-year surveys required.
Cordyceps ophioglossoides	3	B	11	8	Low number of total sites, only one recent Federal site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.
Cortinarius azureus	3	B	N/A	0	Synonymous with *Cortinarius barlowensis*. No known sites in Northwest Forest Plan areas; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius boulderensis	1, 3	B	6	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius cyanites	3	B	N/A	0	No known sites in Northwest Forest Plan area; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius magnivelatus	1, 3	B	4	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius olympianus	1, 3	B	10	17	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius speciosissimus (Cortinarius rainierensis)	1, 3	B	4	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius spilomeus	3	B	1	0	Synonymous with *Cortinarious depauperatus*. No known sites in Northwest Forest Plan area; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius tabularis	3	B	5	0	No known sites in Northwest Forest Plan area; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Total Sites Since '93[3]**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
Cortinarius umidicola (Cortinarius canabarba)	1, 3	B	2	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius valgus	3	B	N/A	0	No known sites in Northwest Forest Plan area; probably rare. Recent surveys had not located any sites. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius variipes	1, 3	B	2	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius verrucisporus	1, 3	B	N/A	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Cortinarius wiebeae	1, 3	B	3	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Craterellus tubaeformis (syn. *Cantharellus tubaeformis*)	3, 4	D	11	76-143	Moderate/high number of total sites in Northwest Forest Plan area; likely under-reported so it may be more common than number of total sites indicates. Habitat broad. Pre-disturbance survey not practical; multi-year surveys required.
Cudonia monticola	3	B	3	4	Very low number of total sites in Northwest Forest Plan area, although not expected to be rare. Pre-disturbance survey not practical; multi-year surveys required.
Cyphellostereum laeve	3	B	3	0	Very low number of total sites, no recent Federal sites in Northwest Forest Plan area, although under-reported. Pre-disturbance survey not practical; multi-year surveys required.
Dermocybe humboldtensis	1, 3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Destuntzia fusca	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Destuntzia rubra	1, 3	B	1	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Dichostereum boreale (Dichostereum granulosum)	1, 3	B	2	0	Only one site in Northwest Forest Plan area, although likely under-collected. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Elaphomyces anthracinus	1, 3	B	2	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Elaphomyces subviscidus	1, 3	B	8	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Endogone acrogena	1, 3	B	3	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Endogone oregonensis	1, 3	B	15	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Entoloma nitidum (Rhodocybe nitida)	1, 3	B	9	4	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Fayodia bisphaerigera (Fayodia gracilipes)	3	B	2	0	Very low number of total sites in Northwest Forest Plan area; none recent. Pre-disturbance survey not practical; multi-year surveys required.
Fevansia aurantiaca (Alpova sp. nov. # Trappe 1966) (*Alpova aurantiaca*)	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Galerina atkinsoniana	3	B	N/A	12	Very low number of total sites in Northwest Forest Plan area, though under-collected. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required; this genus is difficult to distinguish to species.
Galerina cerina	3	B	N/A	1	Very low number of total sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required; this genus is difficult to distinguish to species.
Galerina heterocystis	3	E	N/A	0	No known sites in Northwest Forest Plan area at this time, need to determine potential for presence in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
Galerina sphagnicola	3	E	N/A	0	No known sites in Northwest Forest Plan area at this time, need to determine potential for presence in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Total Sites Since '93[3]**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
Galerina vittaeformis	3	B	N/A	28	Very low number of total sites in Northwest Forest Plan area. Late-successional or old-growth forest association not certain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required; difficult to distinguish.
Gastroboletus imbellus	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gastroboletus ruber	1, 3	B	11	4	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gastroboletus subalpinus	1, 3	B	17	7	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gastroboletus turbinatus	3	B	N/A	0	Very low number of total sites in Northwest Forest Plan area; rarer than originally thought. Pre-disturbance survey not practical; multi-year surveys required.
Gastroboletus vividus (*Gastroboletus* sp. nov. #Trappe 2897; *Gastroboletus* sp. nov. #Trappe 7515)	1, 3	B	2	5	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gastrosuillus amaranthii (*Gastrosuillus* sp. nov. #Trappe 9608)	1, 3	E	0	0	Found just outside Northwest Forest Plan area; likely habitat exists within Northwest Forest Plan, no currently known sites within NFP area. Pre-disturbance survey not practical; multi-year surveys required.
Gastrosuillus umbrinus (*Gastroboletus* sp. nov. #Trappes 7516)	1, 3	B	1	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gautieria magnicellaris	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gautieria otthii	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gelatinodiscus flavidus	1, 3	B	9	5	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Glomus radiatum	1, 3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Gomphus bonarii	3	B	7	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gomphus clavatus	3	B	25	20	Low number of total sites in Northwest Forest Plan area, although under-collected; commonly harvested for consumption (not harmed by harvest). Pre-disturbance survey not practical; multi-year surveys required; difficult to distinguish.
Gomphus floccosus, In Oregon and Washington	3	Off	35	134	High number of total sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement). High proportion of sites and likelihood of habitat in protected land allocations. Well distributed in most of its range. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.
Gomphus floccosus, In California	3	F	10	25	Low number of total sites in Northwest Forest Plan area, but this may be an artifact of limited survey effort (no pre-disturbance surveys required). May be common, uncertain concern for persistence. Wide habitat amplitude. Pre-disturbance survey not practical; multi-year surveys required.
Gomphus kauffmanii	3	B	22	30	Low/moderate number of total sites in Northwest Forest Plan area; not likely under-collected or under-reported. Pre-disturbance survey not practical; multi-year surveys required.
Gymnomyces abietis (*Gymnomyces* sp. nov. #Trappe 1690, 1706, 1710; *Gymnomyces* sp. nov. #Trappe 4703, 5576; *Gymnomyces* sp. nov. #Trappe 5052; *Gymnomyces* sp. nov. #Trappe 7545; *Martellia* sp. nov. #Trappe 1700; *Martellia* sp. nov. #Trappe 311; *Martellia* sp. nov. #Trappe 5903)	1, 3	B	17	1	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gymnomyces nondistincta (*Martellia* sp. nov. #Trappe 649)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gymnopilus punctifolius	1, 3	B	30	18	Moderate number of total sites in Northwest Forest Plan area, very low number of recent Federal sites. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Gyromitra californica	3, 4	B	N/A	10	Low number of known sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gyromitra esculenta	3, 4	F	N/A	111	High number of total sites in Northwest Forest Plan area despite limited survey effort (no pre-disturbance surveys required); poisonous; under-reported. May be common, uncertain concern for persistence. Late-successional or old-growth forest association questionable. Pre-disturbance survey not practical; multi-year surveys required.
Gyromitra infula	3, 4	B	N/A	23	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required; difficult to distinguish.
Gyromitra melaleucoides	3, 4	B	N/A	12	Only one know site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Gyromitra montana (*Gyromitra gigas*)[4]	3, 4	F	N/A	24-65	Moderate number of total sites Northwest Forest Plan area. May be common, uncertain concern for persistence. Well distributed. Pre-disturbance survey not practical; multi-year surveys required.
Hebeloma olympianum (Hebeloma olympiana)	1, 3	B	3	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Helvella compressa	1, 3	Off	17	142	Not closely associated with late-successional or old-growth forest; frequent in younger forests and highly disturbed sites.
Helvella crassitunicata	1, 3	B	19	1	Low number of total sites in Northwest Forest Plan area; most federal; few recent. Pre-disturbance survey not practical; multi-year surveys required.
Helvella elastica	1, 3	B	14	11	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Helvella maculata	1, 3	B	14	3	Low number of total sites in Northwest Forest Plan area; most non-federal. Pre-disturbance survey not practical; multi-year surveys required.
Hydnotrya inordinata (*Hydnotrya* sp. nov. #Trappe 787, 792)	1, 3	B	3	4	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Hydnotrya subnix (Hydnotrya subnix sp. nov. #Trappes #1861)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Hydnum repandum	3	Off	83	93	Moderate/high number of total sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement), under-reported. High proportion of sites and likelihood of habitat in protected land allocations. Well distributed in most of its range, broad habitat requirements.
Hydnum umbilicatum	3	B	17	41	Low number of total sites in Northwest Forest Plan area. Rarer than previously thought. Pre-disturbance survey not practical; multi-year surveys required.
Hydropus marginellus (Mycena marginella)	3	B	31	1	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Hygrophorus caeruleus	1, 3	B	1	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Hygrophorus karstenii	3	B	N/A	0	No information; little known. Probably rare. Pre-disturbance survey not practical; multi-year surveys required.
Hygrophorus vernalis	1, 3	B	4	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Hypomyces luteovirens	3	B	8	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.
Leucogaster citrinus	1, 3	B	7	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Leucogaster microsporus	1, 3	B	7	2	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Macowanites chlorinosmus	1, 3	B	11	2	Very low number of total sites in Northwest Forest Plan area; most non-federal. Pre-disturbance survey not practical; multi-year surveys required.
Macowanites lymanensis	1, 3	B	1	1	Only one known site in Northwest Forest Plan area; in campground. Pre-disturbance survey not practical; multi-year surveys required.
Macowanites mollis	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Marasmius applanatipes	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Martellia fragrans	1, 3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Total Sites Since '93[3]**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
Martellia idahoensis	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Martellia maculata (*Elaphomyces* sp. nov. #Trappe 1038)	1, 3	Off	27	many dozens	This species is the correct name for what was thought to be an undescribed species *(Elaphomyces* sp. nov. #Trappe 1038). *Martellia maculata* passed FEMAT screens as adequately provided for in Northwest Forest Plan.
Martellia monticola	1, 3	Off	--	--	Not known to occur in Northwest Forest Plan area.
Mycena hudsoniana	1, 3	B	8	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Mycena monticola	1, 3	B	6	10	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Mycena overholtsii	1, 3	B	9	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Mycena quinaultensis	1, 3	B	22	0	Low number of total sites in Northwest Forest Plan area; most historic, although likely under-collected. Pre-disturbance survey not practical; multi-year surveys required.
Mycena tenax	3	B	18	0	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Mythicomyces corneipes	3	B	8	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Neolentinus adhaerens	1, 3	B	3	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Neolentinus kauffmanii	1, 3	B	29	2	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Neournula pouchetii	1, 3	B	8	18	Low number of total sites in Northwest Forest Plan area; about half federal. Pre-disturbance survey not practical; multi-year surveys required.
Nivatogastrium nubigenum	1, 3	B	21	12	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required; timing critical; found at high elevation at snow line.
Octavianina cyanescens (*Octavianina* sp. nov. #Trappe 7502)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Octavianina macrospora	1, 3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Octavianina papyracea	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Omphalina ericetorum (Phytoconis ericetorum)	3, 4	Off	60	33	Low/moderate number of recent Federal sites (even with lack of pre-disturbance survey requirement), more common than thought. Well distributed. Habitat variable and very common. Moderate proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.
Otidea leporina	3, PB	B	5	13	Low number of total sites in Northwest Forest Plan area; half federal. Pre-disturbance survey not practical; multi-year surveys required.
Otidea onotica	3, PB	F	8	159	Moderate/high number of total sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable. May be common, uncertain concern for persistence. Pre-disturbance survey not practical; multi-year surveys required.
Otidea smithii	1,3, PB	B	2	5	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia attenuata	3	D	37	50	Low/moderate number of total sites in Northwest Forest Plan area, including new sites. Widespread. Habitat relatively common. Need to determine high-priority sites for management. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia californica	1, 3	B	11	20	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia carmanahensis	1, 3	Off	--	--	Synonymous with *Phaeocollybia oregonensis*, which is also a Survey and Manage species. See *Phaeocollybia oregonensis*.
Phaeocollybia dissiliens	1, 3	B	4	4	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia fallax	3	D	45	50	Moderate number of total sites in Northwest Forest Plan area; half federal; half in reserves. Widespread; habitat relatively common. Need to determine high-priority sites for management. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Total Sites Since '93[3]**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
Phaeocollybia gregaria	1, 3	B	2	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia kauffmanii	1, 3	D	28	34	Low/moderate number of total sites in Northwest Forest Plan area; most new; likely under-reported. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia olivacea	3	B	29	30-50	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia oregonensis (syn. *Phaeocollybia carmanahensis*)	1, 3	B	1	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia piceae	1, 3	B	7	5	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia pseudofestiva	3	B	4	11	Low number of total sites in Northwest Forest Plan area. Rarer than previously thought. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia scatesiae	1, 3	B	7	16	Low number of total sites in Northwest Forest Plan area; few on federal lands. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia sipei	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Phaeocollybia spadicea	3	B	20	7	Low/moderate number of total sites in Northwest Forest Plan area; included in extensive surveys but not being found. Pre-disturbance survey not practical; multi-year surveys required.
Phellodon atratus (Phellodon atratum)	3	B	28	20	Low number of total sites in Northwest Forest Plan area; most non-federal. Pre-disturbance survey not practical; multi-year surveys required.
Pholiota albivelata	1, 3	B	28	0	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Pithya vulgaris	1, 3	D	20	32-135	Moderate/high number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Plectania melastoma	3	F	24	74	Moderate/high number of total sites in Northwest Forest Plan area. May be common, uncertain concern for persistence. Broad ecological distribution. Late-successional or old-growth forest association questionable. Pre-disturbance survey not practical; multi-year surveys required; required microscopic examination to even identify to genus.
Plectania milleri	1, 3	B	1	9	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required; required microscopic examination to even identify to genus.
Podostroma alutaceum	3	B	10	2	Low number of total sites in Northwest Forest Plan area. Under-reported and protected. Pre-disturbance survey not practical; multi-year surveys required.
Polyozellus multiplex	1,3, PB	B	11	12-19	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Pseudaleuria quinaultiana	1, 3	B	4	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria abietina	3	B	1	2	Very low number of total sites in Northwest Forest Plan area; all historic; no recent sites despite surveys. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria amyloidea	1, 3	B	3	9	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria araiospora	1, 3	B	7	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria aurantiisiccescens	1, 3	B	4	11	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria botryis var. *aurantiiramosa*	1, 3	B	1	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria celerivirescens	1, 3	B	4	14	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria claviramulata	1, 3	B	2	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria concolor f. marrii	1, 3	B	1	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Total Sites Since '93[3]**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
Ramaria concolor f. tsugina	3	B	1	1	Only one known site in Northwest Forest Plan area; historic. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria conjunctipes var. *sparsiramosa (Ramaria fasciculata* var. *sparsiramosa)*	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria coulterae	3	B	0	6	Very low number of total sites in the Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria cyaneigranosa	1, 3	B	6	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria gelatiniaurantia	1, 3	B	2	8	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria gracilis	1, 3	B	4	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria hilaris var. *olympiana*	1, 3	B	2	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria largentii	1, 3	B	2	2	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria lorithamnus	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria maculatipes	1, 3	B	3	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria rainierensis	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria rubella var. *blanda*	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria rubribrunnescens	1, 3	B	3	3	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria rubrievanescens	1, 3	B	5	10	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Ramaria rubripermanens	1, 3	B	1	42-75	Moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria spinulosa var. *diminutiva* (*Ramaria spinulosa*)	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria stuntzii	1, 3	B	8	11	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria suecica	3	B	1	0	Very low number of total sites in Northwest Forest Plan area; most historic. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria thiersii	1, 3	B	1	2	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Ramaria verlotensis	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Rhizopogon abietis	3	B	6	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; requires expert to identify; also requires multi-year surveys.
Rhizopogon atroviolaceus	3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Rhizopogon brunneiniger	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Rhizopogon chamaleontinus (*Rhizopogon* sp. nov. #Trappe 9432)	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Rhizopogon ellipsosporus (*Alpova* sp. nov. # Trappe 9730)	1, 3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Rhizopogon evadens var. *subalpinus*	1, 3	B	13	6	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Rhizopogon exiguus	1, 3	B	5	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Rhizopogon flavofibrillosus	1, 3	B	5	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Rhizopogon inquinatus	1, 3	B	2	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Total Sites Since '93[3]**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
Rhizopogon parksii (*Rhizopogon* sp. nov. #Trappe1692; *Rhizopogon* sp. nov. #Trappe 1698)	1, 3	Off	190	many	Not closely associated with late-successional or old-growth forest. Well distributed, very common.
Rhizopogon truncatus	3	D	3	0	Low/moderate number of total sites in Northwest Forest Plan area, but data missing; under-collected, may be locally abundant. Most known sites in Northwest Forest Plan area in reserves. Can be in young stands. High proportion of records and moderate likelihood of habitat in protected land allocations. Pre-disturbance survey not practical; multi-year surveys required.
Rhodocybe speciosa	1, 3	B	3	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Rickenella swartzii (Rickenella setipes)	3	B	6	1	Very low number of total sites in Northwest Forest Plan area; only vague locations. Pre-disturbance survey not practical; multi-year surveys required.
Russula mustelina	3	B	0	0	Only one known site in Northwest Forest Plan area, no Federal sites. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; multi-year surveys required.
Sarcodon fuscoindicus	3	B	29	15	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Sarcodon imbricatus	3	B	39	30	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Sarcosoma latahense (Plectania latahensis)	1, 3	B	3	10	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Sarcosoma mexicanum, all of Oregon, except Curry and Josephine Counties	3, PB	Off	6	292	High number of total sites in this portion of the Northwest Forest Plan area. Found routinely in young stands. Well distributed. Moderate proportion of sites and likelihood of habitat in protected land allocations.
Sarcosoma mexicanum, Washington, California, Curry and Josephine Counties in Oregon.	3, PB	F	0	16	Low number of total sites in this portion of Northwest Forest Plan area. Late-successional or old-growth forest association questionable, may be more frequent in early seral forests. Pre-disturbance survey not practical; multi-year surveys required.
Sarcosphaera coronaria (Sarcosphaera eximia)	3	B	N/A	27	Low/moderate number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Total Sites Since '93[3]	Primary Reasons for Assignment of Species to Category Under Alternative 1
Sedecula pulvinata	1, 3	B	2	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Sowerbyella rhenana (Aleuria rhenana)	1, 3, PB	B	8	8	Low number of total sites in Northwest Forest Plan area; rare. Pre-disturbance survey not practical; multi-year surveys required.
Sparassis crispa	3	D	22	5	Low number of total sites in Northwest Forest Plan area; half federal; very under-reported. Heavily harvested. Pre-disturbance survey not practical; multi-year surveys required.
Spathularia flavida	3	B	23	3	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Stagnicola perplexa	3	B	8	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year survey required.
Thaxterogaster pavelekii (*Thaxterogaster* sp. nov. #Trappe 4867, 6242, 7427, 7962, 8520)	1, 3	B	6	0	Low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Thaxterogaster pingue	3	Off	9	64	Moderate number of total sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement). Widespread; locally abundant. Potential high-elevation habitat; mostly in protected land allocations. High proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.
Tremiscus helvelloides (syn. *Phlogiotis helvelloides*)	3, 4	B	5	35	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Tricholoma venenatum	1, 3	B	1	0	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Tricholomopsis fulvescens	1, 3	B	5	1	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Tuber asa (*Tuber* sp. nov. #Trappe 2302)	1, 3	B	1	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.
Tuber pacificum (*Tuber* sp. nov. #Trappe 12493)	1, 3	B	2	0	Very low number of total sites in Northwest Forest Plan area. Pre-disturbance survey not practical; multi-year surveys required.

Table F-1. Current NFP ROD Species Categories, Assignment of Fungi Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment. [1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Total Sites Since '93[3]**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
Tylopilus porphyrosporus (Tylopilus pseudoscaber)	1 ,3	D	29	2	Low/moderate number of total sites in Northwest Forest Plan area. Persistent at historic sites, even impacted ones. Pre-disturbance survey not practical; multi-year surveys required.

[1] For taxa indicated by two scientific names, the first name is the currently accepted name, based on recent revisions. The name in parentheses is that used in the Northwest Forest Plan (Table C-3).
[2] Pre-FEMAT site numbers represent sites located prior to 1994.
[3] Total sites include all sites identified in 1994 and later.
[4] Species was misidentified in FEMAT.
N/A = Data not available.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS					
Bryoria pseudocapillaris	1, 3	B	6	2	Very low number of recent Federal sites in Northwest Forest Plan area. Narrowly distributed along coast, and typically small populations. Pre-disturbance survey not practical; difficult to key to species requiring hazardous chemical tests, microscopic examination, and high level of training; may grow intermixed with common members of the genus.
Bryoria spiralifera	1, 3	B	6	2	Very low number of recent Federal sites in Northwest Forest Plan area. Narrowly distributed along coast. Pre-disturbance survey not practical; difficult to key to species requiring hazardous chemical tests, microscopic examination, and high level of training; may grow intermixed with common members of the genus.
Bryoria subcana	1, 3	B	1	19	Low number of recent Federal sites in Northwest Forest Plan area. Many of the recent Federal sites may be misidentified. Narrowly distributed along coast, small populations. Pre-disturbance survey not practical; difficult to key to species requiring hazardous chemical tests, microscopic examination, and high level of training; may grow intermixed with common members of the genus.
Bryoria tortuosa, WA Olympic Peninsula, WA Western Lowlands, WA Western Cascades, OR Western Cascades, OR Coast Range, OR Willamette Valley, and CA Coast Range Physiographic Provinces	1, 3	A	10	6	Very low number of recent Federal sites in this portion of the Northwest Forest Plan area. Pre-disturbance survey practical.
Bryoria tortuosa[3], WA Eastern Cascades, OR Eastern Cascades, OR Klamath, CA Klamath, and CA Cascades Physiographic Provinces	1, 3	D	8	73	Moderate number of recent Federal sites in this portion of the Northwest Forest Plan area, locally common. Widely distributed in dry forest habitat. Pre-disturbance surveys not necessary.
Buellia oidalea	1, 3	E	23	1	Only one recent Federal site in Northwest Forest Plan area; few protected. Need to determine late-successional or old-growth forest association.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
LICHENS (continued)					
Calicium abietinum	4	B	1	6	Very low number of recent Federal sites in Northwest Forest Plan area, though under-reported. Pre-disturbance survey not practical; extremely small, difficult to locate and identify, microscope necessary.
Calicium adaequatum	4	Off	0	3	Not closely associated with late-successional or old-growth forest.
Calicium adspersum	4	E	2-3	0	Little known; no new sites. Need to determine late-successional or old-growth forest association. Uncertain distribution and rarity.
Calicium glaucellum	4	F	2	57	Moderate/high number of recent Federal sites in Northwest Forest Plan area; high proportion of sites in protected land allocations. May be common, uncertain concern for persistence. Wide habitat amplitude.
Calicium viride	4	F	2	71	Moderate/high number of recent Federal sites in Northwest Forest Plan area; approximately half of the sites are in reserves. May be common, uncertain concern for persistence. Wide habitat amplitude.
Cetrelia cetrarioides	4	E	6	17	Low number of recent Federal sites in Northwest Forest Plan area. High proportion of sites in protected land allocations. Late-successional or old-growth forest association questionable.
Chaenotheca brunneola	4	Off	2	21	Not closely associated with late-successional or old-growth forest.
Chaenotheca chrysocephala	4	B	1	6	Very low number of recent Federal sites in the Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; extremely small, difficult to locate and identify, microscope necessary.
Chaenotheca ferruginea	4	B	0	9	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; extremely small, difficult to locate and identify, microscope necessary.
Chaenotheca furfuracea	4	F	3	21	Low/moderate number of recent Federal sites, but this does not represent true rarity; considered common and therefore under-reported by specialists. Wide ecological breadth. May be common, uncertain concern for persistence.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS (continued)					
Chaenotheca subroscida	4	E	0	0	No recent Federal sites in the Northwest Forest Plan area, some uncertainty in accuracy of identification of historic sites. Late-successional or old-growth forest association questionable.
Chaenothecopsis pusilla (syn. *Chaenothecopsis subpusilla*, *Calcium asikkalense*, *Calcium floerkei, Calcium pusillum, Calcium subpusillum)*	4	E	0	0	No recent Federal sites in the Northwest Forest Plan area, due to morphological plasticity and long train of synonymy, significant question as to whether the specimens from historic sites are accurately identified.
Cladonia norvegica	3	B	1	12	Low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey very difficult, requires fertile stalks, easy to mis-identify, significant problems in identifying to species.
Collema nigrescens in OR Klamath, CA Klamath, and CA Coast Physiographic Provinces	4	Off	2	431	High number of recent Federal sites in Northwest Forest Plan area; many new sites. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations.
Collema nigrescens, in Washington and Oregon, except in Oregon Klamath Physiographic Province	4	F	5	16	Low number of recent Federal sites in Northwest Forest Plan area, but not indicative of rarity because habitat is naturally rare on forests and would likely be missed in ecology plot surveys that have produced locations for other species. Late-successional or old-growth forest association questionable. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Cyphelium inquinans	4	Off	2	29	Not closely associated with late-successional or old-growth forest.
Dendriscocaulon intricatulum	1, 3	B	1	67	Moderate/high number of recent Federal sites in Northwest Forest Plan area, though very low populations at individual sites. Pre-disturbance survey not practical; small and difficult to detect, required expert identification.
Dermatocarpon luridum	1, 3	B	6	6	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; very difficult to detect in streams, and difficult to identify to species.
Erioderma sorediatum	1, 3	Off	4	5	Not closely associated with late-successional or old-growth forest.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP *Species*	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
LICHENS (continued)					
Heterodermia leucomelos (syn. *Anaptychia leucomelaena, Heterodermia leucomelaena*)	1, 3	Off	34	0	Not closely associated with late-successional or old-growth forest.
Heterodermia sitchensis	3	E	0	0	No known sites in Northwest Forest Plan area at this time, need to determine potential for presence in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
Hydrothyria venosa	1, 3	Off	35	89	Moderate/high number of recent Federal sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement). High proportion of sites in protected land allocations. Well distributed. Reserves and provisions, including Riparian Reserves and Aquatic Conservation Strategy objectives, of the Northwest Forest Plan provide for a reasonable assurance of species persistence.
Hypogymnia duplicata (syn. *Hypogymnia elongata*)	1, 2, 3	A	14	56	Low/moderate number of recent Federal sites in Northwest Forest Plan area; most federal. Pre-disturbance survey practical.
Hypogymnia oceanica	1, 3	F	3	223	High number of recent Federal sites in Northwest Forest Plan area, large increase in sites since FEMAT. Well distributed, broad ecological amplitude. Moderate proportion of sites and likelihood of habitat in protected land allocations.
Hypogymnia vittata (Hygomnia vittiata)	3	E	0	0	No known sites in Northwest Forest Plan area at this time but suspected habitat, need to determine potential for presence in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
Hypotrachyna revoluta (syn. *Parmelia revoluta*)	3	E	0	1	Only one known site in the Northwest Forest Plan area, no recent sites. Late-successional or old-growth forest association questionable.
Kaernefeltia californica (Cetraria californica)	1, 3	Off	41	5	Not closely associated with late-successional or old-growth forest.
Leioderma sorediatum	1, 3	Off	1	1	Not closely associated with late-successional or old-growth forest.
Leptogium brebissonii	1, 3	Off	0	7	Not closely associated with late-successional or old-growth forest.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS (continued)					
Leptogium burnetiae var. *hirsutum* (syn. *Leptogium hirsutum*)	4	A	1	1	Only one known site in Northwest Forest Plan area; no recent Federal sites. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Leptogium cyanescens	4	A	0	3	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Leptogium rivale	1, 3	B	2	28	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Need to determine late-successional or old-growth forest association. Pre-disturbance survey not practical; very difficult to detect; very small and occurs submerged in streams, also on the downstream sides and beneath large boulders.
Leptogium saturninum	4	Off	3	23	Not closely associated with late-successional or old-growth forest.
Leptogium teretiusculum	4	E	2	3	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
Lobaria hallii	1, 3	Off	44	301	High number of recent Federal sites in Northwest Forest Plan area. Not closely associated with late-successional or old-growth forest, well distributed, broad ecological amplitude. Moderate proportion of sites in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Lobaria linita	1, 2, 3	A	46	42	Limit to variety *tenuior*; other variety not closely associated with late-successional or old-growth forest. Low/moderate number of recent Federal sites in Northwest Forest Plan area despite inclusion in extensive ecology plot and lichen surveys. Low density/number of individuals at sites. Pre-disturbance survey practical.
Lobaria oregana, In Oregon and Washington	4	Off	42	448	High number of recent Federal sites in this portion of the Northwest Forest Plan area. Well distributed. High likelihood of habitat in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
LICHENS (continued)					
Lobaria oregana, In California	4	A	0	6	Low number of recent Federal sites in this portion of the Northwest Forest Plan area. Pre-disturbance surveys practical.
Lobaria pulmonaria	4	Off	70	1808	Very high number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Lobaria scrobiculata	4	Off	26	152	Not closely associated with late-successional or old-growth forest. Common; widespread.
Loxosporopsis corallifera (*Loxospora* sp. nov. "*corallifera*")	1, 3	Off	1	39	Not closely associated with late-successional or old-growth forest. Widespread, but spotty distribution.
Microcalicium arenarium	4	B	0	0	Very few sites in the Northwest Forest Plan area, no recent Federal sites. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; extremely small, difficult to locate and identify, microscope necessary.
Mycocalicium subtile	4	Off	0	8	Not closely associated with late-successional or old-growth forest.
Nephroma bellum	4	F	9	117	High number of recent Federal sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement). Broad ecological distribution. May be common, uncertain concern for persistence.
Nephroma helveticum	4	Off	36	304	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and high likelihood of habitat in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Nephroma isidiosum	3	E	0	0	No known sites in Northwest Forest Plan area, but suspected habitat on Federal lands, need to determine range in Northwest Forest Plan area. Late-successional or old-growth forest association unknown.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS (continued)					
Nephroma laevigatum	4	Off	22	134	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Nephroma occultum	1, 3	B	21	74	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance surveys not practical; canopy lichen, presence in litterfall is unpredictable, would likely require climbing of very old trees to confirm presence, this would be a significant safety risk.
Nephroma parile	4	Off	12	60	Not closely associated with late-successional or old-growth forest. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Nephroma resupinatum	4	Off	23	1026	Not closely associated with late-successional or old-growth forest. Well distributed. Moderate proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Niebla cephalota (syn. *Desmazieria cephaolta, Ramalina cephalota*)	1, 3	A	9	2	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
Pannaria leucostictoides (syn. *Fuscopannaria leucostictoides*)	4	Off	10	56	Not closely associated with late-successional or old-growth forest. Well distributed. High proportion of sites and likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP *Species*	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
LICHENS (continued)					
Pannaria mediterranea (syn. *Fuscopannaria mediterranea*)	4	Off	2	8	Not closely associated with late-successional or old-growth forest. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Pannaria rubiginosa	1, 3	E	7	8	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
Pannaria saubinetii	4	F	12	114	High number of recent Federal sites in the Northwest Forest Plan area. Widespread in Oregon, but not Washington. May be common, uncertain concern for persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Peltigera collina	4	Off	36	420	Not closely associated with late-successional or old-growth forest. Common. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Peltigera neckeri	4	Off	6	7	Not closely associated with late-successional or old-growth forest. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Peltigera pacifica	4	E	6	29	Low/moderate number of recent Federal sites in Northwest Forest Plan area but limited survey effort. Late-successional or old-growth forest association questionable. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Pilophorus nigricaulis	1, 3	Off	7	8	Not closely associated with late-successional or old-growth forest.
Platismatia lacunosa	4	C	9	42	Moderate number of recent Federal sites in Northwest Forest Plan area; most in reserve allocations. Uncommon, but not rare. Need to determine high-priority sites for management. Air quality concerns beyond purview of Northwest Forest Plan ; air quality managed under other laws. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS (continued)					
Pseudocyphellaria anomala	4	Off	38	862	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Pseudocyphellaria anthraspis	4	Off	51	1667	Very high number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Pseudocyphellaria crocata	4	Off	17	194	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. S ome air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Pseudocyphellaria sp. 1 (Pseudocyphellaria mougeotiana)	1, 3	B	0	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey not practical; taxonomic difficulties in identifying species, difficult for experts.
Pseudocyphellaria rainierensis	1, 2, 3	A	9	98	Moderate/high number of recent Federal sites in Northwest Forest Plan area, though few individuals per site, rare on the landscape level; still rare. Sporadic distribution even in suitable habitat. Sensitive to pollution. Pre-disturbance survey practical.
Pyrrhospora quernea (syn. *Lecidea quernea, Protoblastenia quernea*)	1, 3	E	11	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
Ramalina pollinaria	3	E	8	1	Only one recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP *Species*	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
LICHENS (continued)					
Ramalina thrausta	4	A	3	26	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable. Pre-disturbance survey practical.
Stenocybe clavata	4	E	0	<11	Low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
Stenocybe major	4	Off	2	4	Not closely associated with late-successional or old-growth forest.
Sticta arctica	1, 3	Off	0	0	Not closely associated with late-successional or old-growth forest.
Sticta beauvoisii	4	Off	0	--	This species does not occur in the Northwest Forest Plan area. The taxon referred to under this name is probably *Sticta weigelii* that passed the FEMAT screens for being protected by the Northwest Forest Plan.
Sticta fuliginosa	4	Off	33	198	High number of recent Federal sites in Northwest Forest Plan area. Well distributed, broad habitat. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Sticta limbata	4	Off	11	103	Moderate/high number of recent Federal sites in Northwest Forest Plan area. Well distributed, broad habitat. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
Teloschistes flavicans	1, 3	A	16	2	Very low number of recent Federal sites in Northwest Forest Plan area, occurs along narrow coastal band. Pre-disturbance survey practical; distinctive.
Tholurna dissimilis, south of Columbia River	1, 3	B	4	1	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; cryptic and small or unreachable for surveys where in tops of trees.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
LICHENS (continued)					
Tholurna dissimilis, north of Columbia River	1, 3	Off	4	7	Low number of recent Federal sites in Northwest Forest Plan area, but habitat is very poorly surveyed and difficult to locate without focused surveys. Most sites and high elevation habitat is within protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.
Usnea hesperina	1, 3	B	0	7	Very low number of recent Federal sites in Northwest Forest Plan area; few protected. Pre-disturbance survey not practical; very difficult to identify members of this genus to species.
Usnea longissima, In California, and in Curry, Josephine and Jackson Counties, Oregon	4	A	0	10	Low number of recent Federal sites in Northwest Forest Plan area. On California Red List. Pre-disturbance survey not practical.
Usnea longissima, In Oregon, except in Curry, Josephine and Jackson Counties, and in Washington	4	F	4	93-119	Moderate/high number of recent Federal sites in Northwest Forest Plan area. Wide geographic distribution, spotty distribution within suitable habitat; dispersal capability limited. May be common, uncertain concern for persistence. Moderate proportion of sites and moderate likelihood of habitat in protected land allocations. Some air quality concerns remain but these are beyond the purview of Northwest Forest Plan; air quality managed under other laws.
BRYOPHYTES					
Antitrichia curtipendula	4	Off	204	206	High number of recent Federal sites in Northwest Forest Plan area (even with lack of pre-disturbance survey requirement) under-reported. Well distributed, broad habitat. High proportion of sites and moderate likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan likely to provide for a reasonable assurance of species persistence.
Bartramiopsis lescurii	1, 3	Off	2	--	Not closely associated with late-successional or old-growth forest; rock talus.
Brotherella roellii	1, 3, PB	E	5	0	No recent Federal sites in Northwest Forest Plan area; all historic. Late-successional or old-growth forest association questionable.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
BRYOPHYTES (continued)					
Buxbaumia viridis[3]	PB	D	14	283	High number of recent Federal sites in Northwest Forest Plan area. Moderate proportion of sites and likelihood of habitat in protected land allocations. Pre-disturbance survey not necessary.
Diplophyllum albicans	1, 3	D	62	3	Moderate/high number of total sites in Northwest Forest Plan area; most sites historic; half federal. Pre-disturbance survey not practical; identification to genus possible in field, identification to species requires microscopic examination; detection difficult (cryptic).
Diplophyllum plicatum	1, 2	B	21	24	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; identification to genus possible in field, identification to species requires microscopic examination; detection difficult (cryptic).
Douinia ovata	4	Off	23	23	Not closely associated with late-successional or old-growth forest.
Encalypta brevicolla v. crumiana	1, 3	B	2	0	No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; identification difficult, need detailed microscope work to identify species.
Herbertus aduncus	1, 3	B	4	0	No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; small and difficult to locate; lab identification required; survey of cliffs may be dangerous.
Herbertus sakuraii	1, 3	Off	1	0	Not closely associated with late-successional or old-growth forest; Saddle Mountain species; North Pacific disjunct; cliff associate.
Iwatsukiella leucotricha	1, 3	B	2	0	No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; small and difficult to locate; identification difficult.
Kurzia makinoana	1, 2	B	4	4	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; need expert to identify; very small difficult to locate and detect.
Marsupella emarginata v. aquatica	1, 2	B	1	1	Only one recent Federal site in Northwest Forest Plan area. Pre-disturbance survey not practical; taxonomic variety problem; expert identification required.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
BRYOPHYTES (continued)					
Orthodontium gracile	1, 3	B	27	few	Very low number of recent Federal sites in Northwest Forest Plan area; most non-federal in State parks. Pre-disturbance survey not practical; easily confused with other members of the genus, identification to species requires reproductive structures that are often absent.
Plagiochila satoi	1, 3	Off	3	0	Now considered part of common and widespread species, *Plagiochila asplenioides*, that passed FEMAT screens as adequately provided for in Northwest Forest Plan.
Plagiochila semidecurrens	1, 3	Off	1	0	Not closely associated with late-successional or old-growth forest; Saddle Mountain species; North Pacific disjunct; cliff associate.
Pleuroziopsis ruthenica	1, 3	Off	1	0	Highly likely this species does not occur in the Northwest Forest Plan area; only one old site and the identification of this site is very questionable
Ptilidium californicum, California only	1, 2, PB	A	0	~30	Low/moderate number of recent Federal sites in Northwest Forest Plan area in California. Very limited distribution. Pre-disturbance survey practical.
Ptilidium californicum, Washington and Oregon	1, 2, PB	Off	1	361	High number of recent Federal sites in this portion of the Northwest Forest Plan area. This portion of the range was not indicated of concern by FEMAT process. Northwest Forest Plan was considered to provide for a reasonable assurance of species persistence.
Racomitrium aquaticum	1, 3	B	24	6	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; expert identification required difficult genus taxonomically.
Radula brunnea	1, 3	Off	1	0	Not closely associated with late-successional or old-growth forest; Saddle Mountain species; North Pacific disjunct; cliff associate.
Rhizomnium nudum	PB	B	48	16	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; required difficult lab work to identify to species, even the experts can confuse this species.
Schistostega pennata	PB	A	10	16	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical; distinctive.
Scouleria marginata	4	Off	10	4	Not closely associated with late-successional or old-growth forest.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
Tetraphis geniculata	1, 3, PB	A	6	24	Low number of recent Federal sites in Northwest Forest Plan area Pre-disturbance survey practical.
Tritomaria exsectiformis	1, 2	B	3	7	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; lab verification required; small and difficult to detect as often intermixed with other species; expert verification required.
Tritomaria quinquedentata	1, 3	B	4	0	No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; need expert identification.
Ulota megalospora	PB	Off	37	1303	Not closely associated with late-successional or old-growth forest. Common.
VERTEBRATES					
Del Norte salamander *Plethodon elongatus*[3]	2, PB	D	400-500	450-600	Moderate/high number of recent Federal sites in Northwest Forest Plan area from extensive surveys for several years, 40 percent in reserves. Need to determine high-priority sites for management. Pre-disturbance survey not necessary.
Larch Mountain salamander *Plethodon larselli*	2, PB	A	78	19-34	Low/moderate number of recent Federal sites in Northwest Forest Plan area despite extensive surveys. Pre-disturbance survey practical.
Shasta salamander *Hydromantes shastae*	1, 2, PB	A	46	4	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
Siskiyou Mountains salamander *Plethodon stormi*	1, 2, PB	C	48	128	Moderate/high number of recent Federal sites in Northwest Forest Plan area. Limited range/habitat. Need to determine high-priority sites for management. Restricted habitat; not likely to find many new sites with project surveys. Pre-disturbance survey practical.
Van Dyke's salamander *Plethodon vandykei* (Cascade population only)	2	A	24	8	Low number of recent Federal sites in Northwest Forest Plan area; low level of survey yet. Need to determine late-successional or old-growth forest association but deferring to FEMAT. Restricted habitat; not likely to find many new sites with project surveys. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
VERTEBRATES (continued)					
Great Gray Owl *Strix nebulosa*	PB	C	--	--	Question persistence concern. Have enough information to develop species-specific management. Concerns more related more to non-late-successional or old-growth forest issues and juxtaposition of habitat; landscape issues. Need to determine high-priority sites for management (such as nests) and determine appropriate management at sites. Pre-disturbance survey practical.
Red Tree Vole *Arborimus longicaudus*	2	C	245-310	114-323	Moderate number of recent Federal sites in the Northwest Forest Plan area, extensive recent surveys in some areas. Need to determine appropriate management for this species, including high-priority sites. Pre-disturbance survey practical. (114 confirmed active nests; remainder are possibly active, not confirmed.)
MOLLUSKS					
Ancotrema voyanum	PG	E	8	26	Low number of recent Federal sites in the Northwest Forest Plan area, but with little survey effort to date. Late-successional or old-growth forest association questionable. Riparian Reserves may protect some habitat.
Cryptomastix devia	1, 2	A	22	4	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
Cryptomastix hendersoni	1, 2	A	17	17	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
Deroceras hesperium	1, 2	B	3	2	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; look-alike species area common, species is poorly described and requires an expert to identify at this time.
Fluminicola n. sp. 1	1, 2, PG	A	10	1	Only one recent Federal site in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Fluminicola n. sp. 2	1, 2	A	1	0	Only one known site in Northwest Forest Plan area, no Federal sites. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP *Species*	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
MOLLUSKS (continued)					
Fluminicola n. sp. 3	1, 2, PG	A	3	1	Only one recent Federal site in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Fluminicola n. sp. 11	1, 2, PG	A	2	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Fluminicola n. sp. 14	1, 2	A	9	1	Only one recent Federal site in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Fluminicola n. sp. 15	1, 2	A	4	0	No recent Federal sites in Northwest Forest Plan. Pre-disturbance survey practical.
Fluminicola n. sp. 16	1, 2	A	11	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Fluminicola n. sp. 17	1, 2	A	2	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Fluminicola n. sp. 18	1, 2	A	4	2	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Fluminicola n. sp. 19	1, 2, PG	A	0	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Fluminicola n. sp. 20	1, 2, PG	A	0	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Fluminicola seminalis	1, 2, PG	A	30	3	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association needs to be determined but deferring to FEMAT. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
MOLLUSKS (continued)					
Helminthoglypta hertleini	1, 2	B	10	6	Very low number of recent Federal sites in Northwest Forest Plan area; most non-federal. Pre-disturbance survey not practical; requires identification by a limited number of experts; morphological variation common at the edge of its range.
Helminthoglypta talmadgei	1, 2	A	19	50-74	Moderate number of recent Federal sites in Northwest Forest Plan area; some sites may be mis-identified. Pre-disturbance survey practical.
Hemphillia burringtoni (Hemphillia barringtoni)	1, 2	A	1	20-30	Low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Hemphillia glandulosa	1, 2	C	2	72-108	Moderate number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Hemphillia malonei	1, 2	C	4	80-120	Moderate number of recent Federal sites in Northwest Forest Plan area but clumped. Pre-disturbance survey practical.
Hemphillia pantherina	1, 2	B	1	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; no specimens available, described characteristics may not well represent the species as they are based on limited specimens, expert identification required.
Juga (O) n. sp. 2	1, 2	A	26	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Juga (O) n. sp. 3	1, 2	A	5	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Lyogyrus n. sp. 1	1, 2	A	11	17	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
Lyogyrus n. sp. 2	1, 2	A	1	1	One recent Federal site in Northwest Forest Plan area which is at risk. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP ***Species***	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
MOLLUSKS (continued)					
Lyogyrus n. sp. 3	1, 2	A	1	0	One known site in Northwest Forest Plan area (non-federal) which is at risk, not recent. Pre-disturbance survey practical.
Megomphix hemphilli South of south boundary of Lincoln, Bentonn and Linn Counties	1, 2	F	3	250-350	Moderate/high number of recent Federal sites in Northwest Forest Plan area. May be common, uncertain concern for persistence. Narrow habitat breadth though components may be fairly common.
Megomphix hemphilli North of south boundary of Lincoln, Benton, and Linn Counties	1,2	A	8	70-100	Moderate number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
Monadenia chaceana	1, 2	B	16	32	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; expert identification required and even experts may disagree.
Monadenia churchi	1, 2	F	41	220-330	High number of recent Federal sites in Northwest Forest Plan area, though restricted to a limited range. May be common, uncertain concern for persistence. Pre-disturbance survey practical.
Monadenia fidelis klamathica	PG	B		8	Very low number of recent Federal sites in Northwest Forest Plan area, but with little survey effort to date. Pre-disturbance survey not practical; defining characteristics only relative in nature, juveniles cannot be identified to species, and many look-alikes, expert identification required.
Monadenia fidelis minor	1, 2	A	9	6	Very low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
Monadenia fidelis ochromphalus	PG	B	30	35	Low/moderate number of recent Federal sites in Northwest Forest Plan area, but with little survey effort. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey not practical; defining characteristics only relative in nature, juveniles cannot be identified to species, and many look-alikes, expert identification required.
Monadenia troglodytes troglodytes	1, 2	A	10	0	No recent Federal sites in Northwest Forest Plan area. Very localized; cave mouths. Pre-disturbance survey practical.
Monadenia troglodytes wintu	1, 2	A	7	0	No recent Federal sites in Northwest Forest Plan area; none recent. Very localized; cave mouths. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
MOLLUSKS (continued)					
Oreohelix n. sp.	1, 2	A	1	54	Low/moderate number of recent Federal sites in Northwest Forest Plan area, but identification of individuals at sites questionable, needs verification. Some known sites lost in Tyee fire, species still rare. Pre-disturbance survey practical.
Pristoloma articum crateris	1, 2, PG	B	2	11	Low number of recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey not practical; very small; forest floor dweller (2.75 mm), expert identification required.
Prophysaon coeruleum, In Washington and California	1, 2	A	1	30	Low number of recent Federal sites in this portion of the Northwest Forest Plan area. Pre-disturbance survey practical.
Prophysaon coeruleum, In Oregon	1, 2	Off	1	500-1050	High number of recent Federal sites in this portion of the Northwest Forest Plan area. Habitat relatively common, broad habitat requirements. Likelihood of habitat in Late-Successional Reserves and Riparian Reserves probably high.
Prophysaon dubium	1, 2	Off	2	300-500	High number of recent Federal sites in Northwest Forest Plan area. Widespread distribution and habitat. Broad ecological amplitude. Likelihood of habitat in Late-Successional Reserves and Riparian Reserves probably high.
Trilobopsis roperi	1, 2	A	6	49	Low/moderate number of recent Federal sites in Northwest Forest Plan area. Highly localized distribution. Pre-disturbance survey practical.
Trilobopsis tehamana	1, 2	A	6	0	No recent Federal sites in Northwest Forest Plan area. Pre-disturbance survey practical.
Vertigo n. sp.	1, 2	A	0	1	Only one known site in Northwest Forest Plan area. Pre-disturbance survey practical, but difficult; very small.
Vespericola pressleyi	1, 2	A	18	1	Only one recent Federal site in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Vespericola shasta	1, 2	A	13	2	Very low number of recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association uncertain, deferring to FEMAT. Pre-disturbance survey practical.
Vorticifex klamathensis sinitsini	1, 2	E	2	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.
Vorticifex n. sp. 1	1, 2	E	2	0	No recent Federal sites in Northwest Forest Plan area. Late-successional or old-growth forest association questionable.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
VASCULAR PLANTS					
Allotropa virgata	1, 2	Off	160	957	High number of recent Federal sites in Northwest Forest Plan area. Well distributed. Moderate proportion of sites and high likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.
Arceuthobium tsugense mertensianae, In Washington only	4	F	unknown	8[4]	Previously changed to only include subspecies in Washington and moved to Component 4. Low number of recent Federal sites in Northwest Forest Plan area, but all sites and most habitat in reserves. Mountain Hemlock parasite.
Bensoniella oregana, In California only	1, 2	A	7	3	Very low number of recent Federal sites in Northwest Forest Plan area; two federal; one introduced. Pre-disturbance survey practical.
Botrychium minganense In Oregon and California	1, 2	A	0-6[5]	0-1[5]	Very low number of recent Federal sites in Northwest Forest Plan area; no mitigating information. Need to determine high-priority sites for management. Pre-disturbance survey practical.
Botrychium minganense, In Washington	1, 2	Off	47-74[5]	30-42[5]	Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence. High proportion of sites in protected land allocations.
Botrychium montanum	1, 2	A	32	21	Low number of recent Federal sites in Northwest Forest Plan area; no information to indicate that persistence is not a concern. Need to determine high-priority sites for management. Pre-disturbance survey practical.
Clintonia andrewsiana	1, 2	Off	15	3	Not closely associated with late-successional or old-growth forest. 97% probability of Outcome A and B in FEMAT.
Coptis asplenifolia	1, 2	A	4	9	Very low number of recent Federal sites in Northwest Forest Plan area. Very restricted range; not expected outside northwest Washington. Pre-disturbance survey practical.
Coptis trifolia	1, 2	A	2	1	Only one recent Federal site in Northwest Forest Plan area. Very small range. Not likely to find many new sites with project surveys. Pre-disturbance survey practical.
Corydalis aquae-gelidae	1, 2	C	101	3	Moderate number of total Federal sites in Northwest Forest Plan area, though few are recent. Temperature sensitive. Pre-disturbance survey practical.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]

TAXA GROUP *Species*	NFP Category	Alt. 1	Pre-FEMAT Sites[2]	Recent Federal Sites	Primary Reasons for Assignment of Species to Category Under Alternative 1
VASCULAR PLANTS (continued)					
Cypripedium fasciculatum (all of range)	1, 2	C	524	421	High number of recent Federal sites in Northwest Forest Plan area but many sites with very small populations; still at risk. Expand to apply to all range within Northwest Forest Plan. Need to determine high-priority sites for management. Pre-disturbance survey practical.
Cypripedium montanum (all of range)	1, 2	C	253	127	Moderate/high number of recent Federal sites in Northwest Forest Plan area, but many sites with very low populations; still at risk. Expand to apply to all range within Northwest Forest Plan. Need to determine high-priority sites for management. Pre-disturbance survey practical.
Eucephalus vialis (Aster vialis)	1, 2	A	33	20	Low number of recent Federal sites in Northwest Forest Plan area. Populations isolated. Gap species in forests. Pre-disturbance survey practical.
Galium kamtschaticum - Olympic Peninsula, WA Eastern Cascades, and OR & WA Western Cascades Physiogrpahic Provinces - south of Snoqualmie Pass	1, 2	A	5-6[5]	0[5]-2	Very low number of recent Federal sites in Northwest Forest Plan area; very rare. Restricted habitat; not likely to find many new sites with project surveys. Pre-disturbance survey practical.
Galium kamtschaticum - WA Western Cascades province - North of Snoqualmie Pass	1, 2	Off	42-82[5]	0[5]-17	Low/moderate number of recent Federal sites in Northwest Forest Plan area. High proportion of sites and high likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence
Pedicularis howellii	1, 2, PG	Off	103	2	Not closely associated with late-successional or old-growth forest.
Platanthera orbiculata var. orbiculata (Habenaria orbiculata)	1, 2	C	63	24	Moderate number of total Federal sites (83) though only 24 are recent; small number of plants per site. Moderate/high likelihood of sites in reserve allocations. Does not occur on rare microsites. Pre-disturbance survey practical.
Scoliopus bigelovii	1, 2	Off	15	3	Low number of recent Federal sites in Northwest Forest Plan area, but considered too common to survey for, so very under-reported. Not closely associated with late-successional or old-growth forest. Protected in Redwood National Park. Moderate proportion of sites and high likelihood of habitat in protected land allocations. Reserves and provisions of the Northwest Forest Plan provide for a reasonable assurance of species persistence.

Table F-2. Current NFP ROD Species Categories, Assignment of Species into Survey and Manage Category of Alternative 1, and Primary Reasons for Assignment (Lichens, Bryophytes, Vertebrates, Mollusks, Vascular Plants, and Arthropods).[1]					
TAXA GROUP *Species*	**NFP Category**	**Alt. 1**	**Pre-FEMAT Sites[2]**	**Recent Federal Sites**	**Primary Reasons for Assignment of Species to Category Under Alternative 1**
ARTHROPODS					
Canopy herbivores (south range)	4	F			FEMAT concerns remain. No new information to indicate change in approach would be appropriate.
Coarse wood chewers (south range)	4	F			FEMAT concerns remain. No new information to indicate change in approach would be appropriate.
Litter and soil dwelling species (south range)	4	F			FEMAT concerns remain. No new information to indicate change in approach would be appropriate.
Understory and forest gap herbivores (south range)	4	F			FEMAT concerns remain. No new information to indicate change in approach would be appropriate.

[1] For taxa indicated by two scientific names, the first name is the currently accepted name, based on recent revisions. The name in parentheses is that used in the Northwest Forest Plan (Table C-3).
[2] Pre-FEMAT site numbers represent sites located prior to 1993.
[3] Pre-Disturbance Surveys are deemed practical for this species, but continuing these surveys is not necessary in order to meet management objectives (see Chapter 2 discussion).
[4] Reported in Hildebrand, D., R. Mathiasen, and J.Beatty 1997. Mountain Hemlock Dwarf Mistletoe (Arceuthobium tsugense spp. mertensianae), 1995 General Regional Survey in Washington. USDA Forest Service, Region 6, Portland, Oregon.
[5] Numbers derived from 1998 Vascular Plant Management Recommendations.